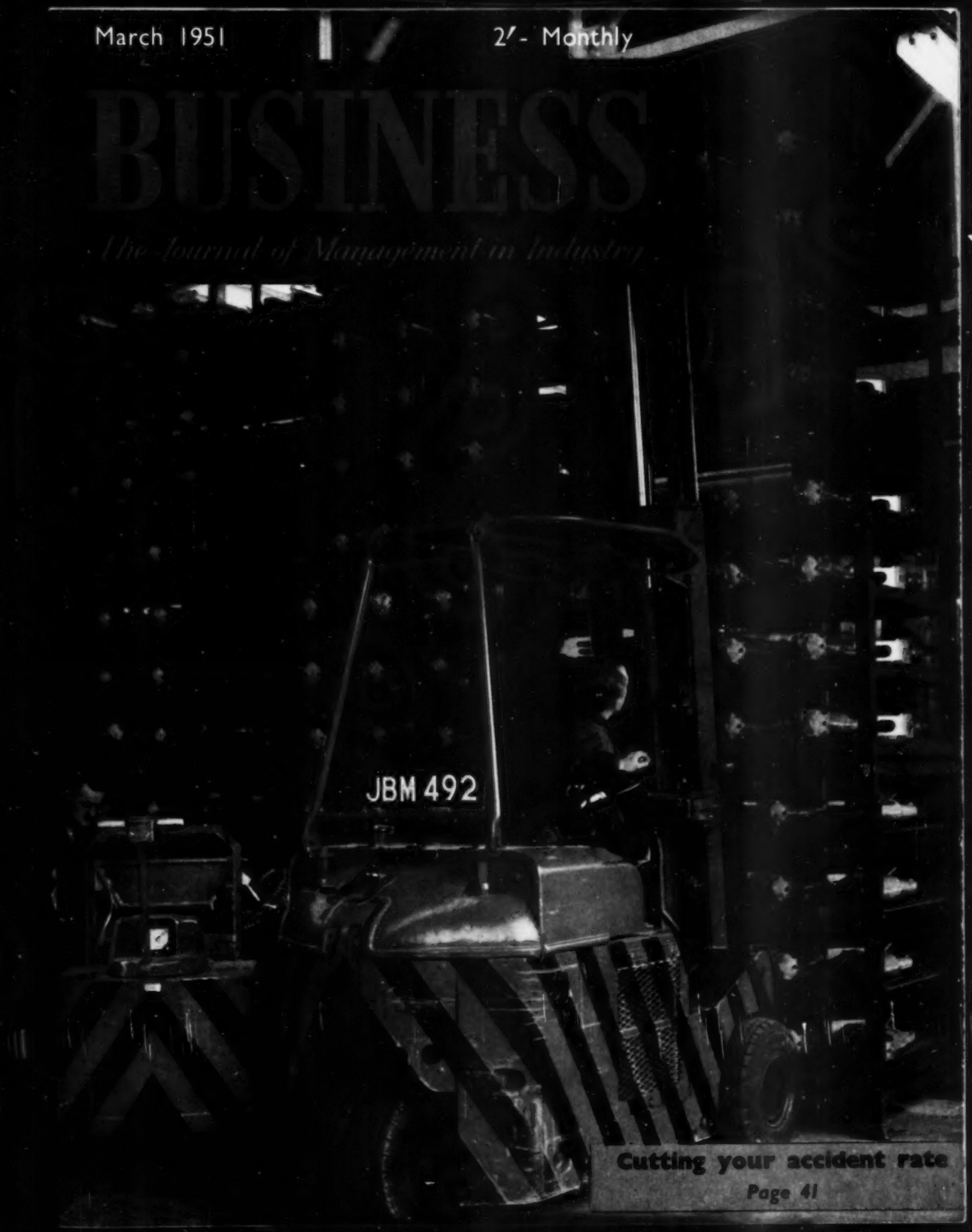
March 1951 2/- Monthly

BUSINESS

The Journal of Management in Industry



Cutting your accident rate

Page 41

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Whatever your business, the adoption of Remington Rand work-simplifying systems and equipment will ensure greater efficiency and better management control.

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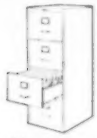

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Easy to operate. The Time-Master is essentially simple. It is by far the best-looking machine and gives the clearest dictation . . . Yes, *and* it is the easiest to work with. You just pop in a Memobelt, flick a switch, and you're all set for 15 minutes perfect recording! The same control automatically backspaces and plays back your last few words so that you can instantly find your place or pick up the sense after an interruption.

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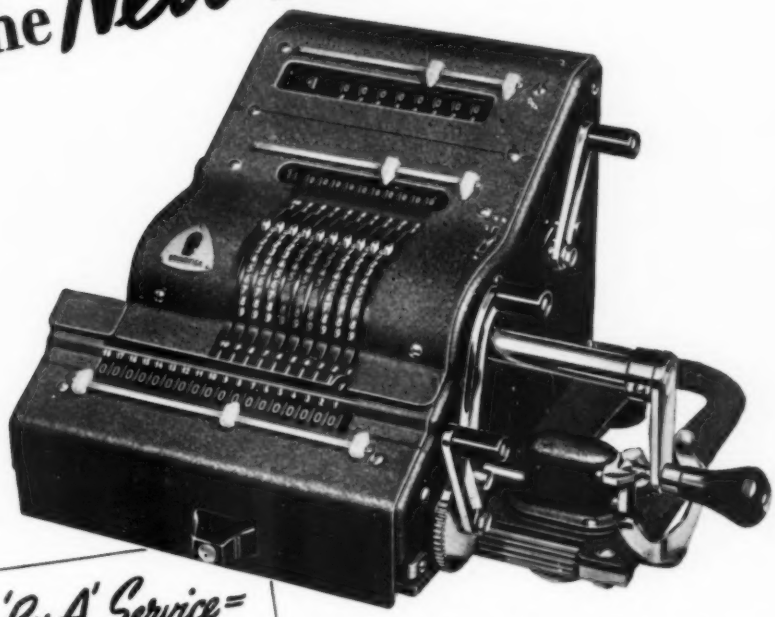

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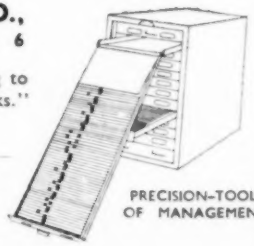

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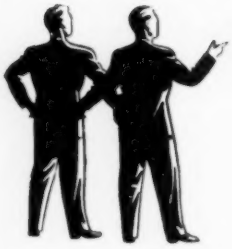

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INSTALLATION on ceiling surface or pendant with suitably styled downrod set and easy fixing devices.

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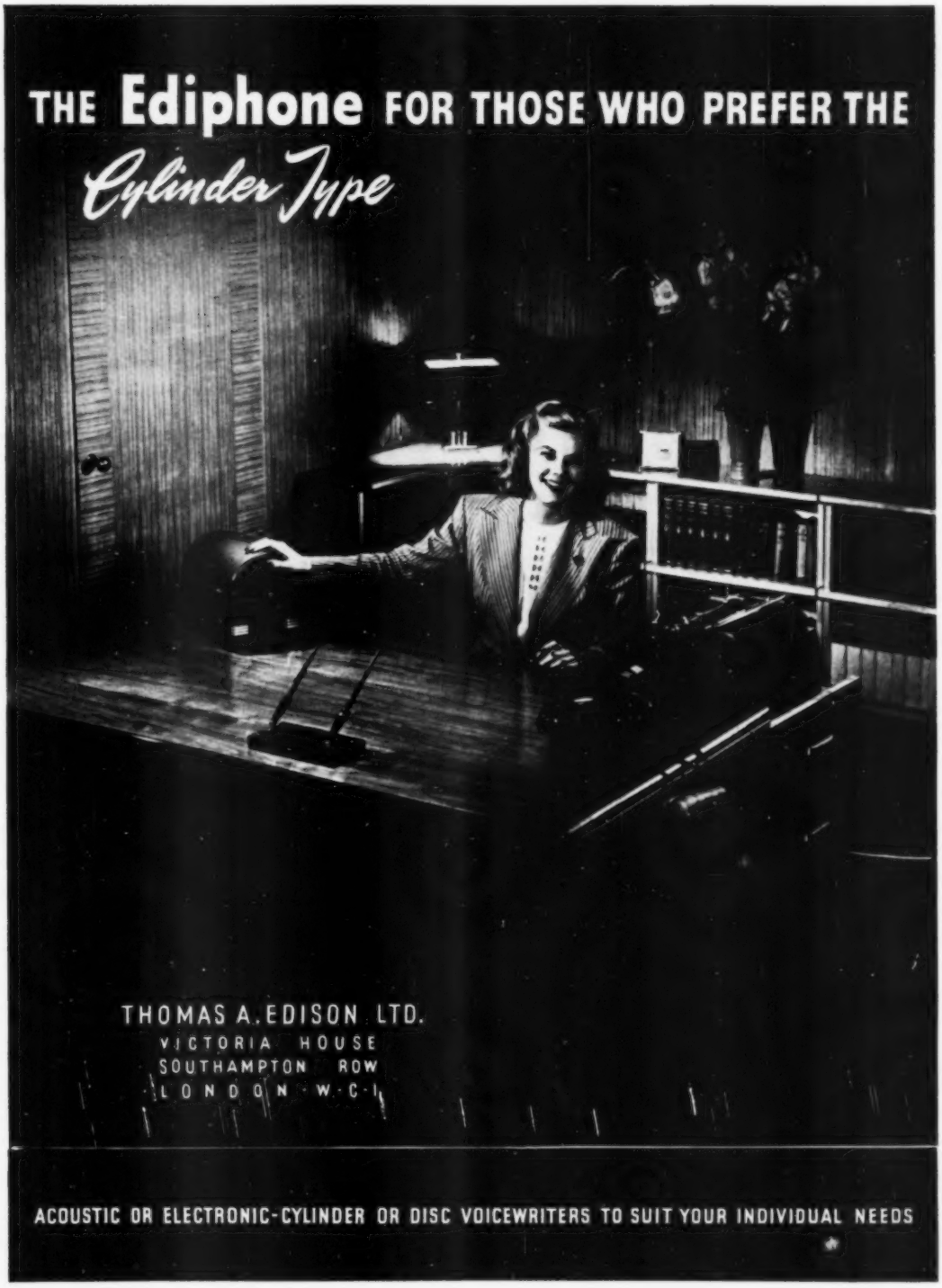
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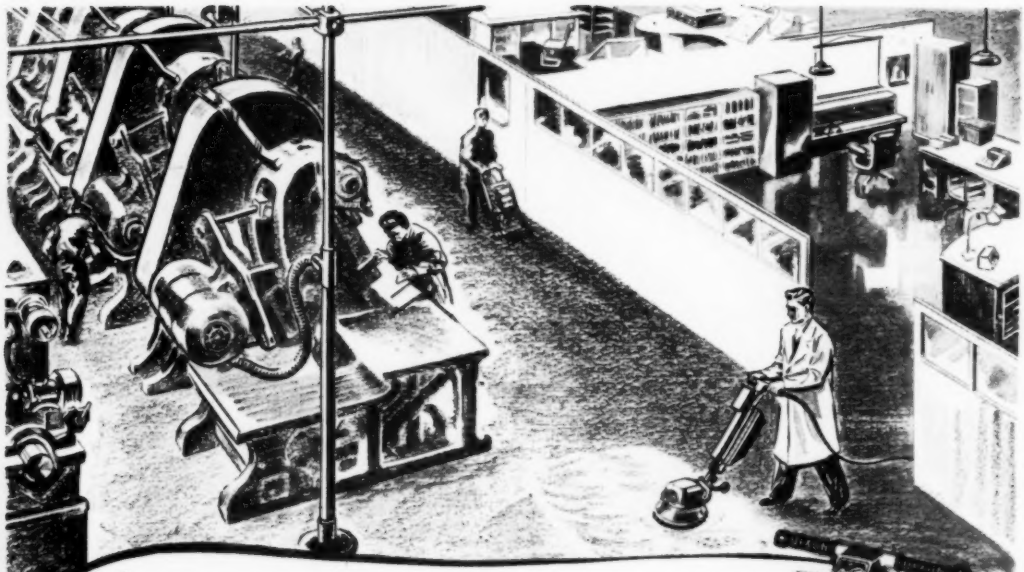

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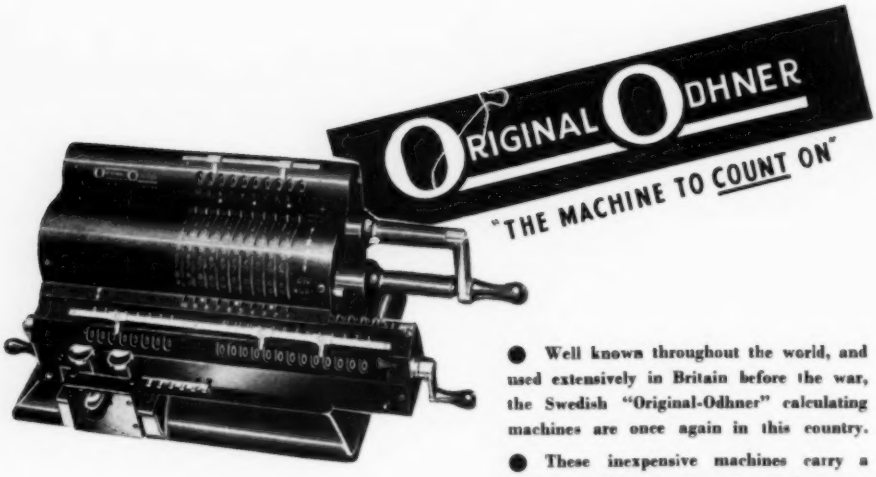

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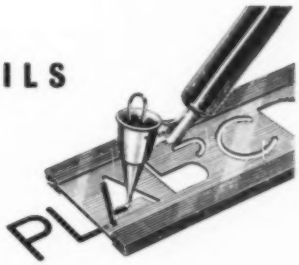

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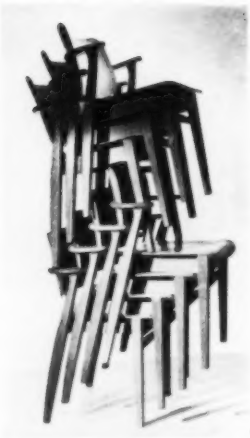

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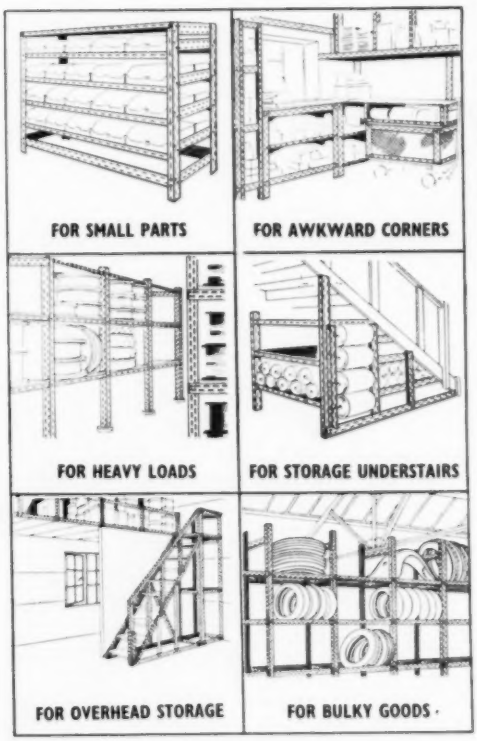

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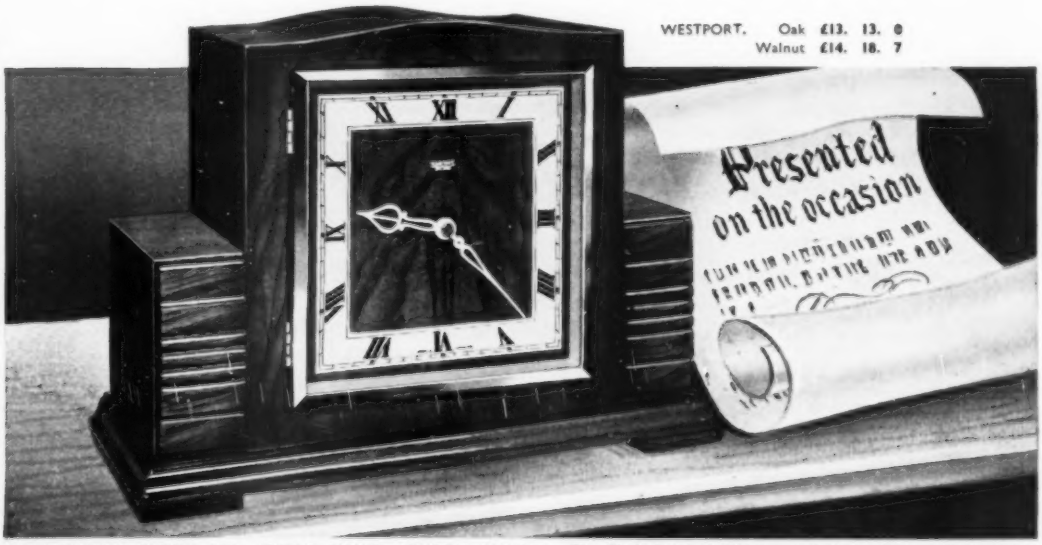

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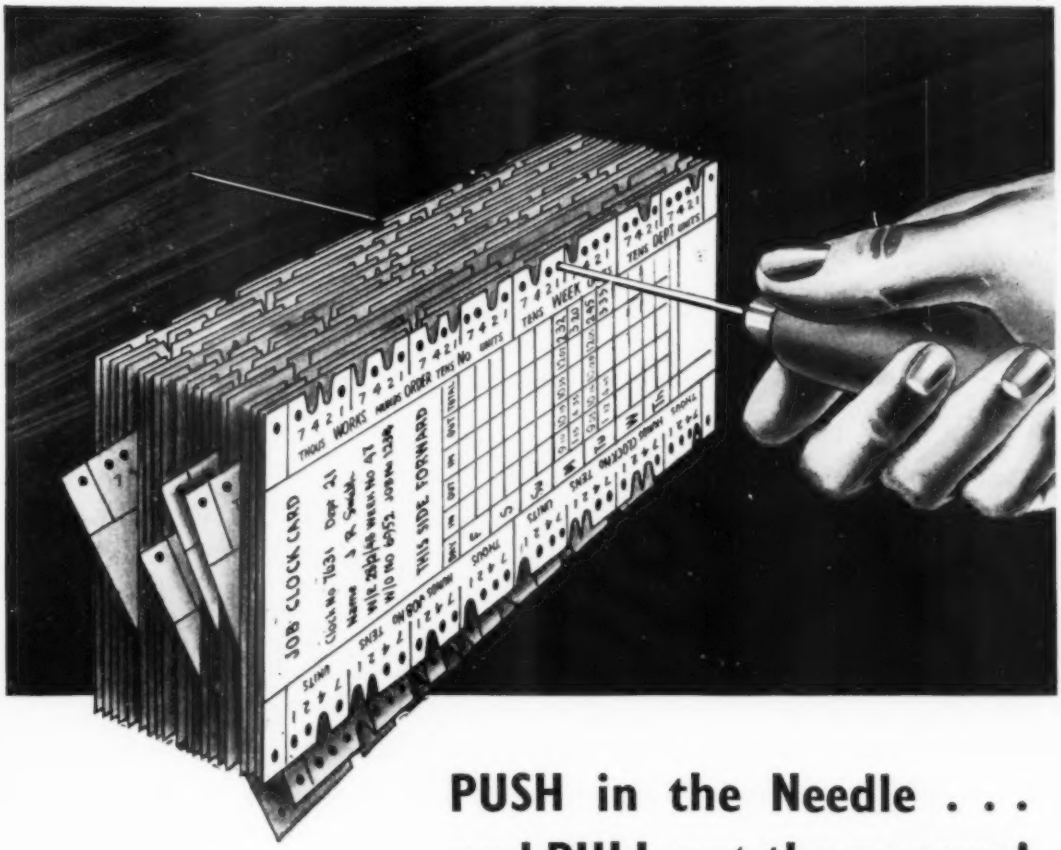

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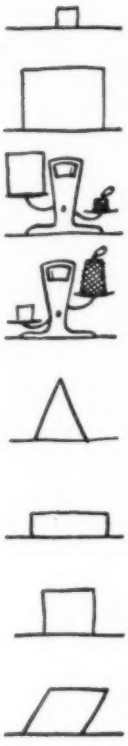

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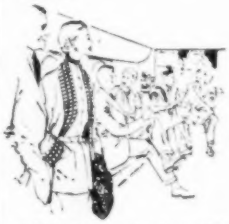

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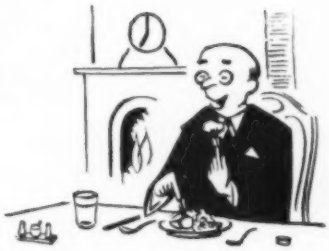

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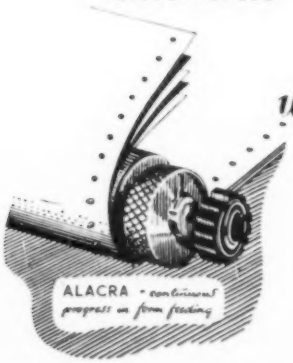

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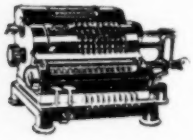

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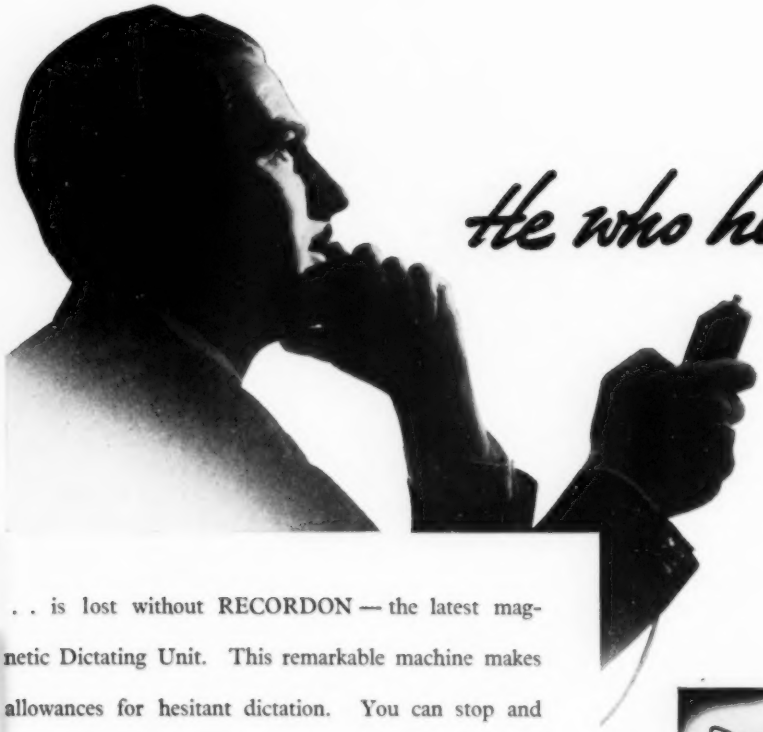

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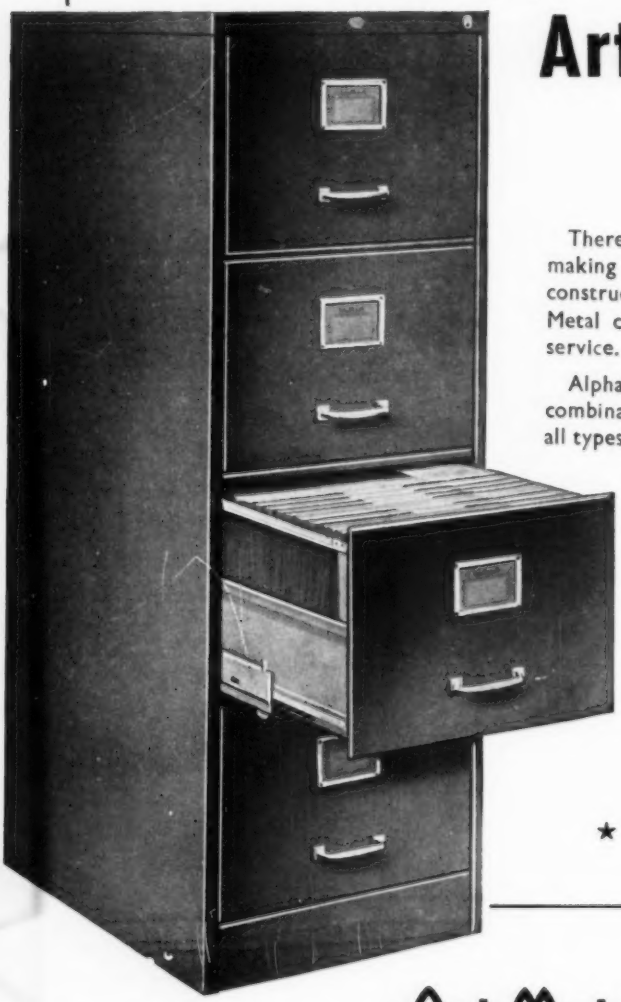

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The Journal of Management in Industry

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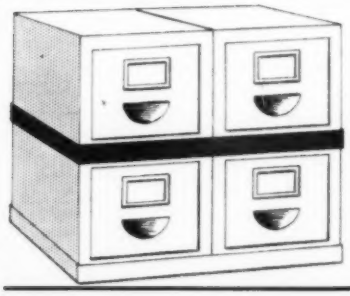

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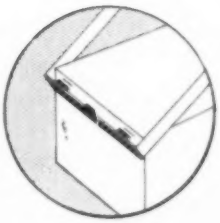

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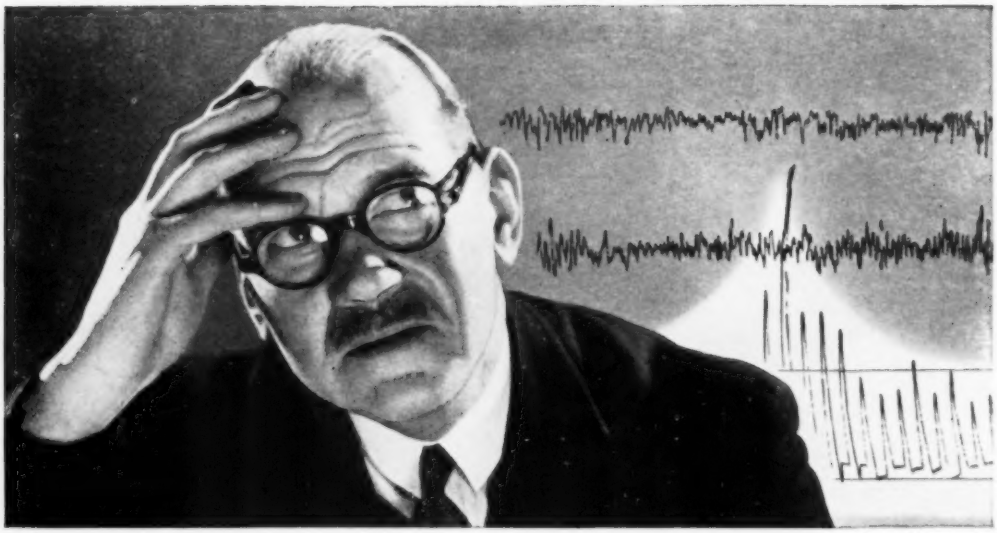

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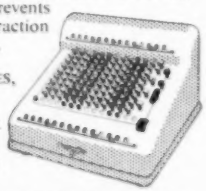

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The MARCH *of* BUSINESS

INCENTIVES—THE PROOF

MUCH of the current controversy over the merits of incentive bonus schemes arises from the difficulty of measuring precisely the effect of such schemes on output and productivity. Limited comparisons of productivity between two or three different firms are of little value, and even the comparison between output of the same firm at different periods is a complicated task.

An interesting attempt to measure objectively the effects of introducing bonus payments in the building industry is made in *Productivity in House-Building*, a special report in the series of National Building Studies published for the Ministry of Works.

A sample of 160 building contracts covering about 3,000 houses in six areas of England and South Wales was taken. The houses, which were being built for local authorities, were all of the traditional three-bedroom type, and roughly comparable in design. On half the sites no bonus was paid, but on the other half the contractors were all paying some form of bonus, amounting, on the average, to about £15 per house.

Differences due to peculiarities of site were effectively averaged out by the size of the sample, and, after taking into consideration the fact that productivity in the building industry was rising as a whole, the report was able to measure the effect on bonuses in concrete terms.

For every £5 paid out in bonus, 60 man-hours were saved, and labour costs reduced by £2 and total costs by £5 (both nett figures).

The size of contract was also found to effect productivity, the larger the contract the greater being the output per worker. Each additional 10 houses on the site reduced man-hours by 2½ per cent, labour costs by 2½ per cent and total costs by £12 10s. per house.

These figures are, of course, averages, and wide variations occurred from site to site; they do, however, prove that, on balance, incentives in the building industry in 1947 and 1948 achieved very real results.

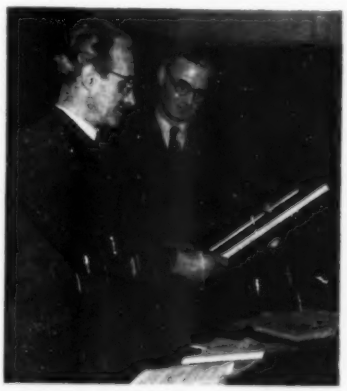
WANTED—A NEW GEDDES

A WELL-ESTABLISHED tradition of the British business scene is the late-January spate of speeches by chairmen of the "Big Five" and lesser banks, reviewing the past and anticipating the forthcoming year in business. In happier times, the effect of these analyses could be seen, at least in part, in the terms of the Budget some three months later; to-day, their effect on official fiscal policy is, to say the least, less marked.

The consistent refusal of socialist Chancellors to profit from their experience and wisdom, however, seems merely to have closed the ranks of the financial leaders of private enterprise. Never before have our bank chairmen been so nearly unanimous in diagnosing the ills of our time or in prescribing the necessary remedies.

This year, every chairman emphasized the inevitability of large-scale inflation in 1951, unless strenuous efforts were made to combat it. There was, moreover, wide agreement on the steps necessary to do so. The desirability of further taxation was universally rejected, since current demands are already absorbing revenue that should go towards providing the increased working capital necessary to finance purchases of materials at higher prices and capital expenditure necessary to meet rearmament and export demands. Cuts in the export programme and in capital expenditure already planned were equally rejected. So, too, though for differing reasons, was revaluation of the pound.

In these circumstances, the only field left for attacking inflation lies in the field of public expenditure, and all the financial leaders suggested that drastic economies are called for in this direction. Just where the axe should fall most heavily was a matter on which individual opinions differed; that it should fall—and fall heavily—is becoming increasingly apparent.



Mr. J. R. M. Simmons (left), President of the Office Management Association, is presented with a diploma on becoming the first Fellow of the Association.

CYBERNETIC REVOLUTION

THREE years ago, Norbert Wiener, professor of mathematics at the Massachusetts Institute of Technology, coined the word "cybernetics" to cover the many-sided science of communication and control devices, of which modern office machines form an important part.

An outstanding example is the UNIVAC now being developed by Remington Rand, Inc., in the United States. This electronic calculator can, according to Mr. Allen N. Seares, vice-president and general manager of the company, do most of the numerical tasks now performed by flesh and blood clerks.

In computing payroll cheques, for instance, it "reads" at 10,000 characters a second, two magnetic tapes with numbers coded on them. One tape carries all the data about each employee; his wage rate, tax status, pension deductions, etc. The

12

REASONS WHY
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other carries the hours worked by each during the pay period. By comparing the tapes at lightning speed, UNIVAC can compute a payroll of 10,000 employees in some 40 minutes.

Professor Wiener has consistently stressed the danger that mechanical brains of this type may come into use too quickly, and that the ensuing crisis of unemployment would threaten the stability of society. The point was underlined by Mr. Luther Gulick, president of the (American) Institute of Public Administration

"Machines can now perform most of the routine operations performed by human beings in mass production manufacturing, mass clerical operations, and in the exercise of technical control processes," he said. They can observe facts, and reach conclusions from their observations. They can make decisions based on observed facts plus remembered facts. They can communicate automatically over any distance. They can set other machines in motion, keep watch over them, and correct their action, keep accounts, and make reports at any desired stage.

These accomplishments of the new machines will, according to Mr. Gulick, allow them to replace 78.4 per cent of the men in factories employing more than 100 workers, and 16.5 per cent of clerical workers. In ten years, he estimated, some 7,500,000 workers will be replaced, and a national emergency could speed up the process greatly.

Remington Rand regard alarmist prognostications of this type with some scepticism. Mr. Seares is convinced that UNIVAC is not "a Frankenstein which can turn upon us and wreck the very foundations of our society." History, he points out, has demonstrated that there is an ultimate good in every new tool. In any case, the acceptance is gradual as the new tool proves its worth. It has never occurred as a sudden change

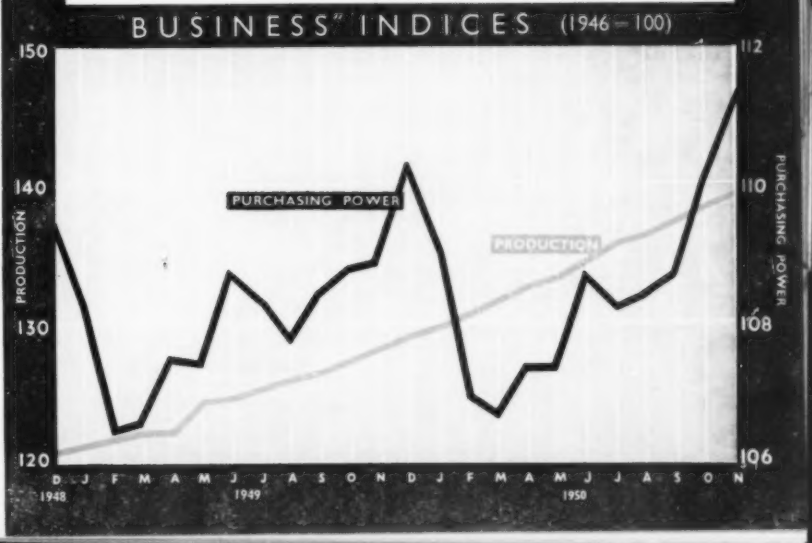
MECHANIZATION & FATIGUE

THE aim of mechanization is the elimination of physical fatigue. Its result is too often the substitution of the mental fatigue associated with boredom and monotony, together with a new type of physical fatigue, resulting from mental

SALIENT FIGURES OF THE MONTH

	Latest Month	Increase (+) or Decrease (—) on a Month Ago	Year Ago
"BUSINESS" INDICES			
Production (1946=100)	* 139.3	+ 1.0	+ 10.0
Purchasing Power do.	* 111.3	+ 0.3	+ 3
MANPOWER			
Total manufacturing industries .. (thousands)	* 8,585	+ 42	+ 190
Cotton spinning and weaving do.	* 335.4	+ 1.8	+ 7.2
Coal (on colliery books) .. do.	688	+ 2	— 21
Reg. unemployed (U. K.) .. do.	330.8	+ 4.7	— 29.9
PRODUCTION			
Index of production (1946=100)	* 150	Same	+ 10
Coal (average weekly output) .. (thousand tons)	4,143	— 261	— 94
Steel ingots and castings (do.) do.	296	— 40	+ 5
Cotton yarn (do.) .. (million lb)	* 17.46	— 0.09	+ 0.32
Woven wool fabrics (do.) (million linear yards)	* 42.84	+ 0.69	+ 1.88
Passenger cars (do.) (thousands)	8.87	— 2.76	+ 0.61
Commercial vehicles (do.) .. do.	4.54	— 0.91	+ 0.19
Permanent houses completed .. .. .. do.	15.95	— 1.50	— 1.49
TRADE			
Value of imports (£ millions)	239.3	+ 4.4	+ 43.6
Value of exports .. .. do.	188.9	— 22.9	+ 32.1
Freight train traffic (million tons)	§ 5.79	+ 0.04	+ 0.17
Retail sales .. .. (1947=100)	* 147	+ 5	+ 10
FINANCE			
Currency in circulation (£ m.)	1,289	+ 38	+ 21
Deposits in London Clearing Banks .. do.	* 6,251	+ 47	+ 185
Provincial cheque clearings (av. working day) .. do.	7.80	+ 0.48	+ 0.94
WAGES AND PRICES			
Weekly wage rates (1947=100)	114	+ 1	+ 5
Retail prices (1947=100)	116	Same	+ 3
Wholesale prices (1930=100)	299.7	+ 2.5	+ 22.6
Basic materials do.	621.8	+ 9.6	+ 94.7
Intermediate do.	343.4	+ 3.9	+ 24.3
Manufactures do.	247.1	+ 1.4	+ 8.7
Import prices (1938=100)	150	+ 3	+ 28
Export prices do.	127	+ 2	+ 12

* November. † January. § Four weeks to December 3rd.
All other figures refer to December.



How to cut absenteeism

The main cause of lost time in industry, according to the Medical Research Council, is sickness absence. Much of this absenteeism can be traced to the transmission of contagious ailments through the use of communal towels. After washing, hands should be dried on a clean, fresh, fluff-free paper towel—an immaculate towel like Hi-Dri, designed to be used once, then thrown away!

ROLLER TOWELS MEAN WAITING and CONGESTION
—Lost Man Hours—Transmission of Germs—Expensive Laundry Bills

MOISTURE MAGNET!
Hi-Dri towels absorb every drop of moisture. Will not disintegrate when wet.

Hi-Dri paper towels cost as little as 1½d. per man per week.

DISPENSER CABINETS SUPPLIED FREE ON LOAN

Hi-Dri
PAPER TOWELS

WITHOUT OBLIGATION

Write or phone today for details or ask for a demonstration of Hi-Dri paper towels and further proof that they can help you cut absenteeism!

HYGIENE PRODUCTS (Gt. Britain) LTD., 11 Grosvenor Gardens, Westminster, London, S.W.1
Telephone: VICtoria 1951/2

concentration, often in a confined space with little allowance for free movement of the body.

One immediate way in which fatigue can be cut is by suitable design of machinery and equipment, and the recently-formed Ergonomics Research Society has now called a symposium on human factors in equipment design to be held at the University of Birmingham from April 18 to 21. Papers will be read by an impressive list of British, Swedish and American scientists.

Two papers by Swedish authors, on "The principles of restful sitting and their significance in the construction of comfortable seats," and "Problems of the circulation in different postures, with special reference to the sitting position in work of low intensity but long duration" should throw light on a rather dark subject—fatigue in the office.

STORING SCIENTIFIC DATA

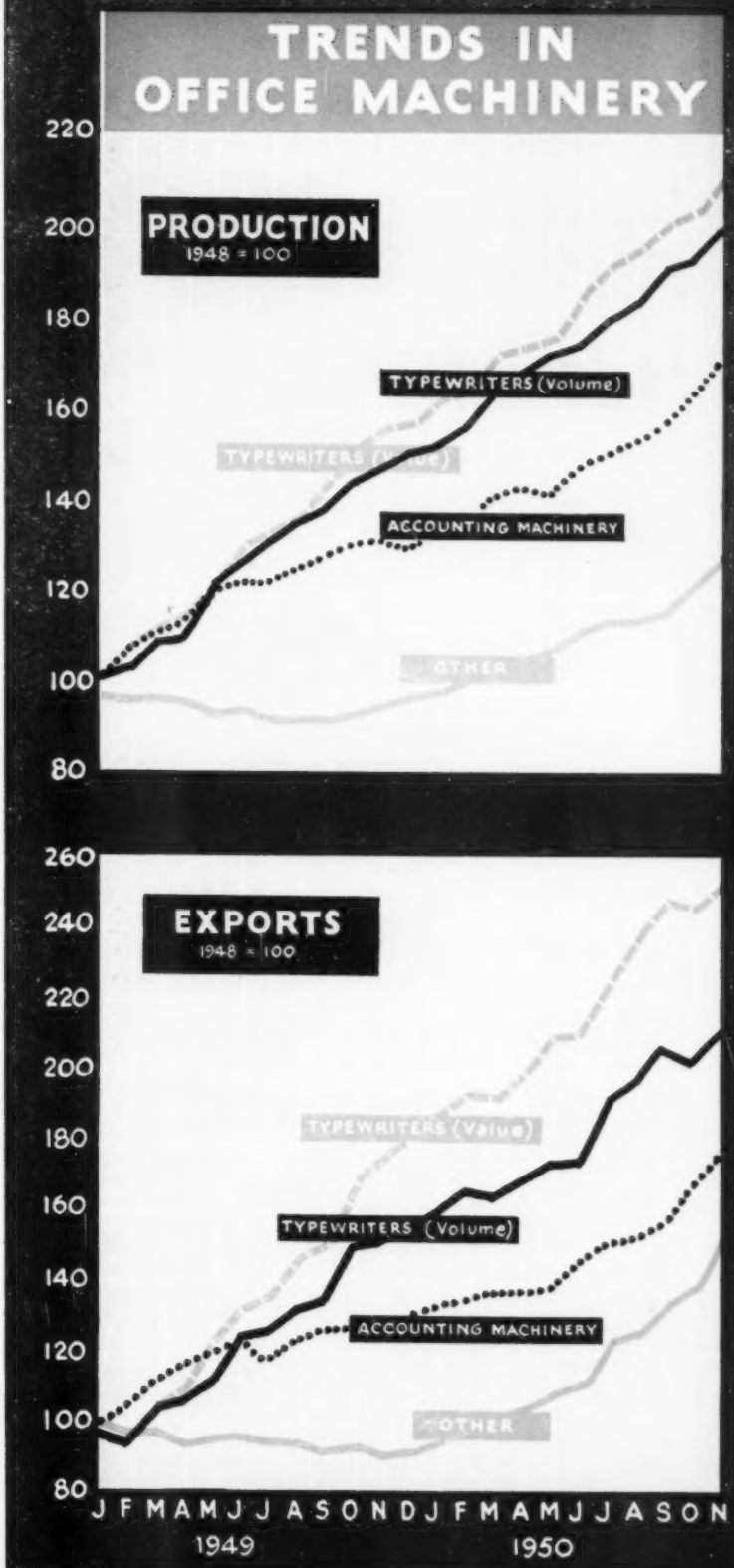
SOME 70,000 papers on chemical subjects are published each year in 5,300 different journals. In the next ten years, a further million papers will have been written. The position regarding physics and engineering publications is almost as difficult. The question of storing this ever-increasing mass of information, and of finding particular items within the mass, has recently been discussed by the American Chemical Society.

In order to extract a particular piece of information in a reasonable time—say, within an hour—the use of a storage library machine has been suggested. This could store up to a million items on

HOW THE CHART IS CALCULATED

The adjacent chart shows the phenomenal growth of production and exports of the office machinery industry over the last two year.

The charts are calculated from official figures issued by the Ministry of Supplys. A twelve-month moving average has been constructed from volume and value returns, and expressed as a percentage of the corresponding average monthly figure for 1948.



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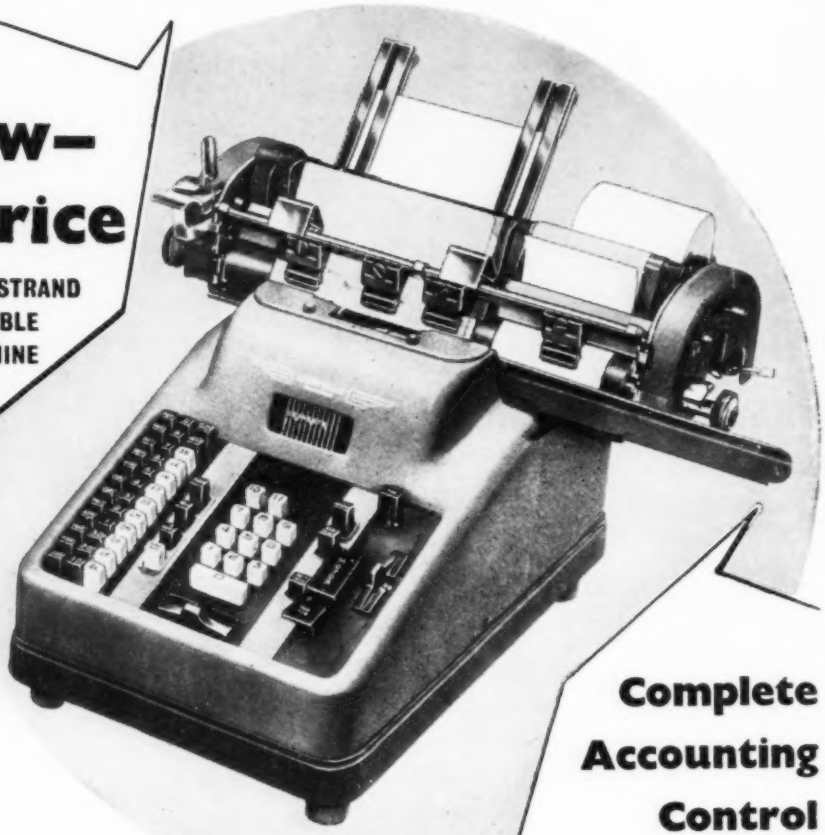
All new– Low price

UNDERWOOD SUNDSTRAND AUTOMATIC PORTABLE ACCOUNTING MACHINE



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Small . . . compact . . . portable . . . a Single Register Accounting Machine for all accounting requirements. Equipped with 12-Key Keyboard and 13" or 18" Dual Feed Carriage. The actual operation is reduced to utmost simplicity so that the operator can concentrate on the correct transcription of figures.

The most up-to-date aid to efficiency—**at an extremely low cost, bringing the benefits of comprehensive mechanised accounting within the reach of all business undertakings.**

Ideally suited to handling Sales and Purchase Ledgers, Stores Accounts, Cost Records, Payroll and P.A.Y.E. Records, Public Utility Billing, and other requirements demanding simultaneous posting to a series of related records, with AUTOMATIC BALANCING AND LINE BY LINE PROOF OF ACCURACY.

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microfilm, each frame also carrying a code diagram indicating the nature of the item. By examining these codes electronically, the contents of a long reel could be inspected in a minute or two, and the number of the frame giving the desired information found. The machine would, in addition, permit a search to be made for a combination of desired formulae in addition to the normal index headings. Once the desired frame has been found, photographic reprints could be rapidly made.

TRAINING FOR MANAGEMENT

EXECUTIVES interested in assessing the efficiency of their concern (and who to-day is not) will have an opportunity to brush up their technical knowledge at a course on "Measurements for Management" to be given at the College of Aeronautics, Cranfield, from April 9 to 20.

The course is intended to familiarize executives in any industry with modern practices and new developments in the measurement of management factors in work study, financial and cost measurements, dimensional measurements, machine tool and process plant measurements. It will include discussions on special aspects such as quality control, job evaluation and modern methods of cost accountancy.

THE VIRTUOUS CIRCLE

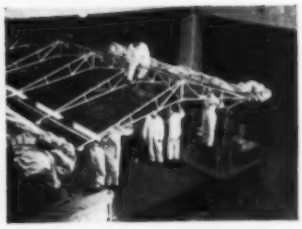
IN April last we gathered, "from information received," that a reorganization scheme had been carried out at the Birmingham plant of Fisher & Ludlow Ltd., which included the introduction on a large scale of the pallets and mechanical handling equipment the firm themselves manufactured.

When a doctor takes his own medicine, there is *prima facie* evidence that it works. We sent down a correspondent to see the firm, and the result was a case history story on palletising published under the title, "Pallets Solved This Mammoth Jobbing Problem" in our June, 1950 issue.

Recently, a brochure sent out by Fisher & Ludlow Ltd. arrived on our desk. It gave the case history of a firm that had introduced palletisation for handling coils of wire. The brochure gave a series of pictures showing the various steps in introducing the system. And the first picture was the photograph of a letter beginning: "We have noticed in BUSINESS an article as to the methods you adopt in transporting your materials from operation to operation. . . ."

The efficiency of British industry is continually improving with the development of new methods and new materials. One firm learns from the example of another, and it is gratifying to BUSINESS to receive this proof that the case histories it regularly reports make no small contribution to this extremely virtuous circle.

Erecting a Factory in 18 Minutes



A new record was set up at Olympia when this unique mobile drum factory—a development of the Van Leer Group—was converted on the spot from a convoy of road vehicles to a high-speed production line. Within 18 minutes a painted metal 10-gallon container was produced, ready for use.

With this self-contained factory, ten men can turn out 1,000 such drums in an 8-hour shift. The "raw materials"—metal sheets—pass through 13 machining steps. From original shearing and rolling, through electric spot and seam welding (the latter a 25-seconds process), flanging, corrugating and seaming, the drum is tested under 7lb. per sq. in. pressure, then painted and baked—all in a matter of ten minutes. This process can be adapted to other types of product by simply changing the tools.

The convoy contains an administrative office, 10-bed and 16-bed sleeping caravans, a kitchen and dining room, and a theatre. A power truck provides electricity for the factory through Diesel-driven, alternating current, 200-K.V.A. generators.

COVER PHOTOGRAPH

THE cover photograph, taken in the new Vauxhall Motors factory at Luton, shows a Coventry Climax fork-lift truck and a Lansing Bagnall truck painted as an accident prevention measure.

Further instances of practical methods of reducing accidents are given in an article on page 41. The week April 2-7 will be a National Good Housekeeping Week for British industry, organized by the Industrial Safety Division of the Royal Society for the Prevention of Accidents.

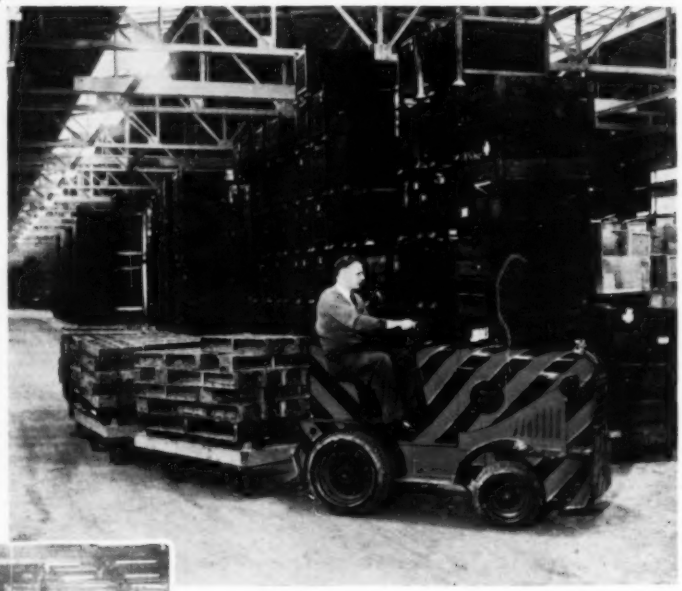
BETTER LIVING - THROUGH INCREASED PRODUCTIVITY

A LANSING BAGNALL CASE HISTORY

SUBJECT: MOTOR INDUSTRY

In the fine new factory building, recently opened by Vauxhall Motors Ltd., Luton, the main store is over a ¼ mile long. It can be easily understood why efficient handling of materials is of such great importance here; so important in fact that material handling methods were the first consideration in planning the lay-out of their new commercial vehicle assembly plant.

The use of a Tractor-Trailer system, employing Lansing Bagnall Model "A" Tractors, has not only reduced the number of times components are handled—from the Receiving Areas to the Stores by 50%—but these components are transported in a quarter of the time previously taken by manual methods.



All incoming Steel Pressings from the Stores Area to the Bedford Lorry Cab and Body Dept., are handled by two of their large fleet of Lansing Bagnall Power Pallet Trucks. These trucks are fitted with a specially hinged frame which enables them to be used either with standard pallets or their two types of box stillage.

Once again, Lansing Bagnall trucks are playing their part in yet another industry, enabling production to flow at an increased rate, saving time and labour, with reduced handling costs.

★ *Can our specialists help solve YOUR materials handling problems — write to us to-day.*

"MECHANISED MUSCLE"

LANSING BAGNALL
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BUSINESS
The Journal of Management in Industry

How 12 firms prevent accidents

By BRIAN CUMMINGS

This article in ONE MINUTE

In tackling the prevention of accidents an ounce of practical experience is worth a ton of theory. Here are the lessons to be learned from what progressive management is doing. One firm have reduced the accident rate by 65% in 21 years.

Top management can do much, not merely to protect their workers but also to benefit themselves—for accidents mean loss of time, therefore lower production. In a subsequent article, BUSINESS will describe how 100 firms pooled knowledge to prevent accidents.

The posters illustrated on this and the following pages were lent by the Royal Society for the Prevention of Accidents.

BROADLY speaking, there are three approaches to the problem of accident prevention. These are:

1. *The provision of material aids (e.g., guards on machines).*
2. *Improvements in working conditions (e.g., better lighting, special colour schemes).*
3. *Propaganda and training aimed at making employees "accident prevention conscious."*

The case histories which follow dive right into the subject. No theory. No "ifs" or "buts." Just plain, hard facts—garnered from firms with wide practical experience. The readiness of these firms to pass on their "know how" will, it is hoped, mean that many accidents that might have happened will now be avoided.

Safer Handling

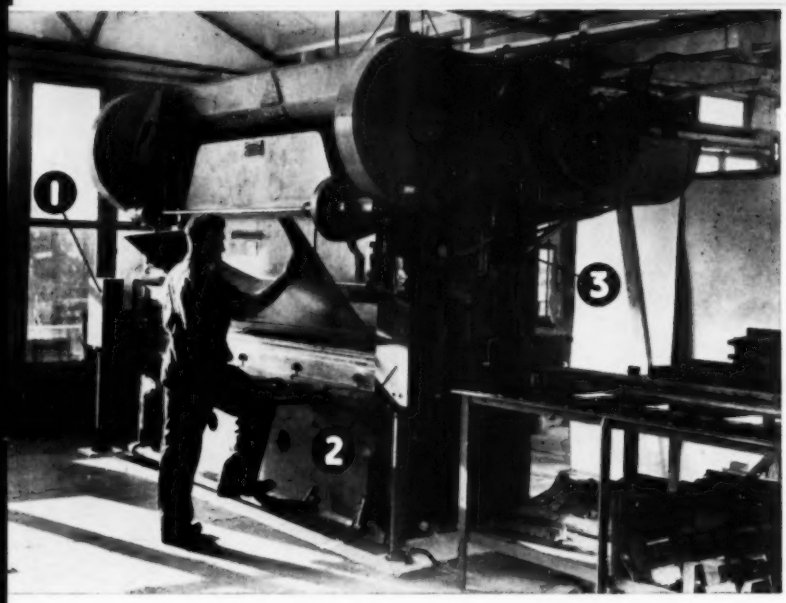
Alperton Bottling Co., Ltd.

The accident risk at Alperton's has been minimized by conveyors, which have almost eliminated hand trucks for moving heavy cases of bottles. The likelihood of cases being dropped or accidents being caused by the movement of trucks is now negligible. Conveying is done on one central belt *made of chains so that workers cannot get their limbs caught between rollers.* The chains run along grooves and the whole system has been so arranged that workers achieve no purpose by climbing over, or on to, the belt.

Starting controls in the bottling plant have been centralized on one wall. This guards against mistakes: machines cannot be started from a number of points or from a hidden position. All workers know the location of the starting gear—*and how to stop machines.*

Alperton's are colour-conscious. They believe that colours—or their absence—have a direct effect on workers' efficiency and well-being. Lower parts of walls are green and all heights above six feet are cream, including the underside of the roof. The same colours have been applied to most of the machinery.

Immediately practical features of the colour scheme are: steam mains painted red; steam condensing mains, orange; hot water pipes,



1. Photo-electric guarding system applied to a 90-ton British Clearing press at Duple Motor Bodies Ltd. The receiver.
2. The projector.
3. The clutch release mechanism.

grey; cold water pipes, white; compressed air mains, blue; drainage pipes, black. All starting gear, and the conveyor system, is blue-grey, and this tone has also been applied to all other parts where there is any danger of contact with moving equipment.

Decentralization

I.C.I. Ltd.

The I.C.I. problem is to achieve a high degree of safety precaution in an organization whose work belongs to several industries. The fact that the accident rate has been reduced by 65 per cent. in 21 years is due to the high degree of co-operation between management, technicians and operatives.

The prevention of accidents has been decentralized, although a central safety section exists to deal with policy and to provide a service to factories. The service includes an expert in publicity—or rather, safety education. The job of this man, who has had works management experience, is to give practical help to factories.

In practice the central safety section consult with works managements and safety committees, presenting the problems clearly and working out the ideas that result from the talks. In this way the central department keeps in touch with local conditions, while the individual factory has the benefit of wider experience.

Publicity material is usually of the mass appeal type, but more direct aid is given to foremen and shop management, while a personal appeal is made to men and women at higher levels. *Foremen and others are encouraged to give safety talks and are supplied with visual aids to help them make their points.*

Most campaigns are based on a single theme, but this is always sufficiently flexible to meet local requirements. In publicity and all other matters affecting safety, there is full interchange of ideas and information between the central section and the individual division, and between the divisions as a whole.

Fitters Make Guards

The Pyrene Co., Ltd.

Pyrene have opened a new department consisting of fitters *whose sole job is to make and maintain guards.* This relieves the maintenance department, which would otherwise be diverted from its true function of keeping plant at the peak of efficiency. The fitters have been chosen for their versatility, inventive genius, interest in accident prevention and high standing with their fellow workers.

The chairman of the company is a founder member of the organization now known as the Royal Society for the Prevention of Accidents. It is hardly surprising, therefore, that Pyrene's ideas on safety should be comprehensive. For at least 36 years accident prevention has been one of the most important items in company policy and for the past decade the application of accident prevention policy has been in the hands of a full-time safety officer.

Accidents have been practically eliminated by careful planning and close liaison between the works engineer's department, the mechanical, electrical, building construction and maintenance departments, and the contractors on the site.

No new plant is put into operation before the works engineer has obtained a clearance from the safety officer. This clearance is also used to sanction the final accounts for plant supplied and installed.

Careful attention is paid to propaganda. ROSPA posters are widely used and changed every week; there is a works safety committee; and methods of preventing accidents appear on the

agenda of the joint production committee.

Most popular feature is a blackboard at the factory entrance, which carries a new safety slogan every day. Here are two examples from the many hundreds which have appeared: "Second Front—Amazing Precautions Taken to Prevent Accidents" (D-Day); "Everyday Tip—Careful Worker Bound to Get Home" (the Derby).

Wise use of space and good housekeeping have minimized the problem of congestion. Accidents have also been reduced by the careful use of colour: British Standard specified colours for service lines and electrical equipment; yellow lines for gangways, different colours for stillages to indicate the trades for which they are being used, *e.g.*, black for those used in connection with the manufacture of car bumpers, with yellow for outstanding feet and stacking heads.

Photo-Electricity

Duple Motor Bodies Ltd.

Guarding a press brake is no easy matter. Experiments at Duple's with mechanical devices led to an uneconomic reduction of the machine's capacity, and suspicion on the part of the operators who saw their earnings threatened. In attempting to maintain production, the machine was jammed—and the whole problem of guarding it had to be started over again.

Duple's then experimented with photo-electric safety guards, and found that, with few exceptions, their problem was solved. Now the press brake is perfectly safe yet works to full capacity and accepts pieces of many different sizes. The system does not involve moving parts.

The Works Technical Engineer told BUSINESS: "The photo-electric system, while appealing to all operators of press brakes, should be of special interest to medium-sized firms whose output is limited. In such cases the press brake becomes a general purpose machine and is required to process a wide range of pieces, including sheet and narrow strip."

Safety Folders

Austin Motor Co., Ltd.

The accident frequency rate at Austin's, who employ 18,000 people at their Longbridge works, is only 1.45 per 100,000 man-hours worked. The company's safety scheme is run by two full-time safety officers,

12 Aids to Accident Prevention

MATERIALS

1. Try out new, better ways to guard machines, e.g. Perspex guards, and photo-electric guards on press brakes.
2. Use colours to distinguish (a) important parts of machinery and plant, (b) obstructions in workshops, and (c) cranes, trolleys and trucks (e.g., bright stripes on fork-lift truck shown in cover picture).
3. Encourage use of protective footwear. Can be bought by employers—then sold to employees in easy payments.

WORKING CONDITIONS

4. Lighting—ensure overall illumination of the working area. No glare, no shadows.
5. Relieve monotony of workshops by varied use of colour.
6. Keep temperatures even; ensure adequate supply of fresh air.
7. Avoid fatigue by providing seats wherever their use is possible. The law on this is clear.

EDUCATION

8. Display eye-catching safety posters (available from the Royal Society for the Prevention of Accidents).
9. Arrange lectures (using visual aids) and demonstrations of the right and the wrong way to do things.
10. Stimulate interest in accident prevention by holding contests for safety slogans.
11. Issue folders of safety instructions to operatives.
12. Set up a works safety committee; make sure it does its job.

Two sections of the I.C.I. travelling exhibition of accident prevention. Left, introductory bay which depicts in symbolic form different aspects of safety. The symbols are executed in paper sculpture. Above, general view of the exhibition.

who are free to act without prior consultation. For example, they can install new machine guards, or replace old ones, immediately this becomes necessary.

Although formerly the safety section was linked with the welfare department, it now functions in co-operation with the works engineer. This arrangement has proved extremely satisfactory.

A folder containing safety regulations is issued to all drivers of internal transport. Each driver has to sign a safety card and is only allowed to drive if he can produce it on demand. Safety instruction cards are also issued to power press operators, and another folder contains safety regulations for working on roofs.

In 1942 it was decided to give safety talks to new apprentices, since when no apprentices have been involved in serious accidents during the first 12 months of their training.

A campaign to encourage workers to wear safety boots met with great success. In 12 months no fewer than 900 workers bought these boots. The result: no more cases of toe crushing reported.

Good Lighting

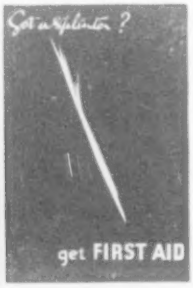
Crompton Parkinson Ltd.

Crompton Parkinson's new extension at their Derby cable works provides a typical example of a really good lighting scheme planned by electrical manufacturers for internal use. The machinery is of a type that cannot be fully guarded and the manufacturing processes involve the handling of large cable drums, so that effective lighting is an essential safeguard if accidents are to be prevented.

It is, of course, to be expected that electrical manufacturers who include among their activities the planning of lighting installations and the production of the lamps and equipment required should in their own factories provide illumination that is completely satisfactory both as an amenity and an aid to maximum productivity. *More than that, there is an expert awareness of the need to ensure overall illumination of the working area, not only to produce the conditions for sustained effort but also for the avoidance of accidents.*

To this end the gangways and approaches to machines along which materials and products are moved must be well lit and without shadows, and equipment should stand out well against the floor and wall backgrounds. Machinery has been suitably coloured to get this result without discomfort.

The lighting installation comprises a mixture of tungsten filament and mercury discharge lamp sources in separate dispersive fittings mounted in pairs, side by side, at 29ft.-0in. above floor level. This arrangement was planned to give an average illumination of 11 to 12 foot candles on the working plane and the lamp sizes chosen, 1,000-w. for the tungsten filament and 400-w. for the mercury dis-



charge lamps, ensure an excellent quality of light, the tungsten filament component being slightly the greater of the two.

The use of individual units side by side ensures maximum lighting efficiency with the normal "cut-off," together with good blending of the two sources and a convenient disposition of fittings for wiring and maintenance.

Another advantage of having two fittings mounted adjacently is that in the event of a lamp failure the local illumination is not affected seriously. With ordinary single lamp lighting there is always a possibility of a dark patch resulting from a lamp failure leading to an accident.

Of particular interest from the accident prevention aspect is that three tungsten filament fittings are mounted on the travelling crane to compensate for the interference with normal lighting when the crane is stationary at any part of the shop.

Above the machine level the walls are cream coloured and this, combined with the lighting, provides excellent visual conditions.

Perspex Guards

Ornstein & Masoff Ltd.

Perspex is being increasingly used for safety guards on machines. Ornstein's have successfully fitted guards of this type to two of their key garment-making machines, thus avoiding any risk of their girl operators being hurt by needles, knives, etc. The Perspex was fitted as an "extra" to the standard guards on the machines.

First it went on the jumping baster, or "plonker," as it is called. This machine is used by Ornstein's for securing canvasses temporarily on the fore-parts of coats. When the machine is stationary the safety arrangements seem to be completely satisfactory, but when working it is possible to force a finger between the guard and the table top. Since the needle operates with great force, serious accidents can occur.

Ornstein's decided on a Perspex guard because it would not greatly impede vision and because the guard could be swung aside for threading the needle. "Experts" said that even if Ornstein's succeeded in fixing the guard—which seemed a technical impossibility—it would impede the work of the machine. In fact, however, Perspex has not lessened the machine's efficiency.

The company experienced several accidents with rotary blade cutting machines when used by apprentices learning to cut linings. These accidents might have proved very serious, for an inexperienced worker can easily lose a finger. Here again Ornstein's used Perspex, fitting a half-moon guard to the existing metal rod. This slowed down the machine's operation speed appreciably, *but this was an advantage because it forced the learner to work more carefully.*

Good Conditions

Hoover Ltd.

Hoover's believe that good working conditions and sound management are two of the biggest factors in accident prevention. Their safety engineer has studied the problem very carefully from these angles and, in co-operation with management and workers, has instituted measures which have so far kept the average accident rate below the target set. This applies both to severity and frequency.

The safety engineer is called upon to keep abreast of legislation, interpret it to management and plan its application. He must also ensure that new processes and plant match up to the company's high standards of safety.

Quarterly accident statistics, graphically presented, are prepared for the main factory at Perivale and for each smaller factory. These statistics, which are studied both in relation to previous factory returns and national figures, are broken down into their various causative factors such as falls, materials handling, etc.

A continuous educational campaign helps to instil "accident prevention consciousness" in employees, the cost of which is more than re-paid by the saving in man-hours. By the study of man hours lost through "materials handling," the company were able to introduce measures which led to the almost complete eradication of this class of accident.

A high labour turnover can, of course, mean a high accident rate, but at Hoover's the labour turnover is particularly low, and, in addition, new employees are instructed in safety measures immediately they join.

When an employee is injured, reports are at once circulated to

Continued on page 90

Good working conditions keep down the accident rate. The apprentices workshop at Hoover Ltd.

GREY IRONFOUNDING

S. H. Russell, Chairman, S. Russell & Sons Ltd., Leicester.

PRESSED METAL

J. M. Phillips, Managing Director, Motor Panels (Coventry) Ltd.

SIMPLIFICATION IN INDUSTRY

J. S. Crawford, C B., C.B.E., Guy Motors Ltd., Wolverhampton.

MANAGEMENT ACCOUNTING

Ian T. Morrow, Partner, Robson, Morrow & Co., London.

What We Can Learn from the Americans

A BUSINESS digest of reports issued by the Anglo-U.S. Council on Productivity

THAT the standard of living of the average American was considerably higher than that of his counterpart in Britain was apparent long before the war. That this superiority was due to the higher output per man-hour of American workers and executives was equally clear.

It is only within the last few years, however, that the outside world has become convinced that, if its economic problems are to be solved and the peace of the world maintained, the productivity of its own workers must be raised to something approaching that of the Americans. In Britain, it was realized that the best way of achieving this was to study just why and how the Americans have reached the high standards they have done, and to apply the results of this study to current problems in each industry.

From this realization came the Anglo-U.S. Council on Productivity, now entering its third year of activity. Consisting of leading industrialists and trade unionists from both sides of the Atlantic, the Council has sponsored, with American financial aid, a long series of visits to the United States by teams representing British industry. These teams have, on their return, issued reports of their activities, with conclusions and recommendations for subsequent action to be taken by British industrialists.

So far, some 22 of these reports have appeared, while another 11 are scheduled for publication in the near future; further teams have yet to be appointed. Most of these reports have been noted in BUSINESS on their publication, but the time has come for a more general survey of the lessons they contain for the British businessman.

This article in ONE MINUTE

Month by month, the reports of teams sent to America by the Anglo-U.S. Council on Productivity have been released. Most businessmen will have read the report covering their own industry; few have time to read any others. But management problems are common to all industries, and each report has something of value to all. Here, in a summary of the reports to date, the author analyses the vital lessons they contain for British industry.

Well written, well produced, and as full of hard facts as an egg is of meat, these reports are a mine of information about American "know-how." Their conclusions fall into three sections. The first concerns the political and social framework within which the American businessman operates—the American "way of life." Their recommendations based on these conclusions would require action by the government for their implementation, and there is little that the individual business man can do, save in his limited capacity as a citizen of a parliamentary democracy.

The second section consists of conclusions and recommendations of a purely technical nature—of intense interest to the industry

BUILDING

Robert O. Lloyd, O.B.E., Man. Director, Lloyd & Cross Ltd., Birkenhead.

MATERIALS HANDLING

A. Roebuck, recently retired director of Hadfields Ltd., Sheffield.

PACKAGING

G. M. Ashwell, Chief Packages Adviser, I.C.I., Ltd., London.

DIESEL LOCOMOTIVES

Col. I. A. Marriott, Man. Dir., The Parsons Eng. Co. Ltd., Southampton.

concerned but of no value outside it.

Finally, each report contains conclusions and recommendations on matters of general management interest; it is with these that this article is concerned.

Even the most cursory reading of these reports will reveal that American business is dominated by two ideas—the need to use to the fullest the best possible machines and the need to maintain and meet competition from all comers. There are, of course, sound historical reasons for this. During the whole of the nineteenth century, nascent American industry was faced with a chronic shortage of workers, with a high labour turnover. The only way to get production at all was to concentrate on economizing labour by the use of machinery. At the same time, the ever-expanding Western frontier gave opportunities for enterprising pioneers that breed a far more competitive spirit than could prevail in the tradition-ridden countries of Europe. Though both these conditions have now vanished, they have left behind a driving force that still holds sway. It is not too much to say that the whole activity of a business concern is conditioned by the demands of the machines it uses, and, *in particular, the machines that it will be able to use to-morrow.*

"The American approach to capital equipment differs from our own in several important respects," states the Pressed Metal report. "As soon as a higher efficiency machine is developed, the press user is anxious to discard his older type of equipment so that his shop may be kept at the peak of efficiency. Slow, cumbersome, out of date equipment finds no place in the American press shop. . . .The American does not look upon his machines as a long term investment but rather as something to use to the utmost capacity during the period of peak efficiency."

By PHILIP F. DYER

Nor is the American businessman content to leave development work to the machinery manufacturers. "Clothing manufacturers are always eager to experiment with the uses to which new machines, gadgets and attachments can be put. They carry out their own experiments to produce fixtures and gadgets, and in many cases these are incorporated in new models produced by manufacturers of machines. *There is generally a willingness to invest in new machinery if it is more efficient than that in use without taking into account the working life of the latter.*" (*Men's Clothing report.*)

The same almost lavish attitude towards the provision of equipment is reflected in the American attitude to power-driven hand tools and other ancillary equipment. "Both management and operatives," comments the Materials Handling report, "are power-driven tool conscious. They are keenly aware that, apart from saving time, power-driven tools mean less fatigue for the operator." "Rather than have a man spend time looking for equipment of which there is enough in the shop, provision is made to have far more than enough. This is not as wasteful as it may sound, since equipment does not wear out by the calendar, but by being used."

The photographs accompanying this article show some leaders of Anglo-U.S. Productivity teams which went to America.

The contribution that the mechanization of materials handling had made to American productivity was early recognized by the Council, which sent out a specialist team to report on the subject. Materials handling accounts for from 15 to 85 per cent. of the total cost of production, and even in America represents about 25 per cent. of the total wages bill. There is obviously as much, if not more, room for cost reduction in this sector as in actual production, and it is significant that each of the industrial reports gives considerable space to the consideration of mechanical handling.

Most of this material is concerned with a description of handling plant and equipment, and today appears somewhat academic to the British manufacturer, faced with long delivery dates for even the most essential equipment. Perhaps the most salutary lesson that can be learnt is *the miracles that*

can be achieved by taking thought and a few feet of angle iron. The Materials Handling team, for instance, report a case in which a British manufacturer made a re-arrangement of five machines and provided simple gravity chutes leading from one to another. He reported a 10 per cent. improvement in output without any other alteration. One of his operators then suggested a way to speed up the slowest operation and synchronize it with the others, which secured a 25 per cent. increase in output over that of the original layout. The re-arrangement also reduced his work-in-progress.

On the basis of their experience in the United States, the Materials Handling team suggest that "a steady, uninterrupted flow of materials to and from each workman will, on the average, raise productivity by at least 15 per cent., using existing productive equipment."

Mechanization on the American scale demands long runs and careful planning if machines are to be used economically and waiting time is to be avoided. Hence the American insistence on simplification, standardization and specialization.

INTERNAL COMBUSTION ENGINES

J. R. Bergne-Coupland, Dir. & Works Manager, Ruston & Hornsby Ltd.

COTTON WEAVING

Ronald Watson, Gen. Man., Simpson & Godlee Ltd., Manchester.

Standardization has been carried out on a nation-wide basis through trade associations, though, as the report on Simplification in British Industry makes clear, Britain does not lag far behind in this direction.

The question of specialization by the individual firm, however, is a different matter, and several reports mention with admiration *the lengths to which small and medium-sized firms will go to in order to secure the long runs essential for high productivity.*

An outstanding feature of the American clothing industry is the way in which individual firms specialize in manufacturing certain types (*e.g.*, overcoats, suits or trousers) and grades of garments, and seldom deviate from the specifications they have laid down. . . . If asked by a retailer to make a particular model in a size not specified for that model, they decline to do so. . . . In other words, the clothing manufacturer tells the retailer what he may have, and if the retailer does not like it he must try elsewhere, for the clothing manufacturer wishes to accumulate identical orders and have long production runs. The manufacturer believes that, taking everything into consideration, it is more economical to refuse orders which will interfere with these long runs." (Men's Clothing report.)

The advantages of standardization are pressed on the consumer by hard selling. "There is an acknowledged tendency for American businessmen first to sell the goods they can make, then manufacture them. Knowing that they can keep down prices only if they specialize on certain lines, preferably standardized completely or in main founding characteristics, they sell these lines at all times in preference to less welcome designs." (Steel Founding report).

The larger home market available to the American manufacturer

12 Ways to Higher Productivity

1. **Mechanize every operation that can be mechanized.**
2. **Scrap a machine as soon as something better is available—even if it still works efficiently.**
3. **Don't leave design to the other man—use your own improvisations to improve your plant.**
4. **Cut movements of material to the bone; if you have to move something, move it mechanically.**
5. **Simplify your programme—cut down the range of sizes, shapes, colours to the half-dozen most popular, and sell these hard.**
6. **Standardize designs to get long production runs. Even on jobbing work, intelligent planning and design can achieve partial standardization.**
7. **Plan ahead to get a steady flow of work.**
8. **Use skilled labour for skilled work. Use unskilled labour to serve the skilled worker.**
9. **Use the figures your accountant provides as the basis of planning—and see you get them quickly.**
10. **Keep a close eye on day-to-day variations in cost—and get every one in the firm equally cost-conscious.**
11. **Keep your workers in the picture. Tell them what is happening and why it is happening.**
12. **Reward initiative—by payments for suggestions, by bonus payments, by promotion from within.**

COTTON YARN DOUBLING

E. Aspinall, Doubling Manager, Greenhalgh & Shaw Ltd., Bolton.

MEN'S CLOTHING

C. C. Newman, Director Walsh & Co., (Bristol) Ltd.

ELECTRIC CONTROL AND SWITCHGEAR

J. R. Walton, Man. Dir., Electrical Apparatus Co. Ltd., St. Albans.

STEELFOUNDING

F. A. Martin, O.B.E., Dir., Samuel Osborn & Co. Ltd., Sheffield.

naturally assists in standardization, but its help can be overestimated. The American Diesel locomotive industry is larger than its British counterpart, but even so it cannot apply mass production techniques to locomotive production. It has, however, devised a system of unit construction in which the locomotive is split into eight sections; many of these units can then be standardized. Other reports also quote partial standardization of this type. "There is evidence of consistent efforts (on non-mass-produced lines) to standardize as much as possible, and to embark on batch production wherever it can be done," states the Electrical Control Gear report. "Jobs are broken down so that one class of labour is used for assembly and another for wiring and so on."

If the full economic benefit of mechanization and standardization is to be obtained, considerable attention must be paid to machine loading so as to avoid idle machine time. *The amount of thought given to advance planning of activities is formidable.* Overall production programmes are in general set for six months, a year or even five years ahead, based on a careful analysis of sales forecasts. Once the general picture has been established, the plan is broken down departmentally.

Practically every team reports the wide-scale use of budgetary control and standard costing. "American managements . . . set themselves targets which are as high as appear from facts and forecasts to be capable of achievement. They are continually measuring their actual results against the target they have set themselves. . . . These principles and methods are applied right down the line."

Numerous comments are made on the speed with which the figures necessary for control purposes were got out, and the way in which they were consistently used

Money and Time Constantly Measured

"Even more impressive was the way in which costing was widespread in each foundry," quotes the Grey Ironfounding report. "Not only did the bookkeeper understand the cost system, not only did the foundry manager and the treasurer and the secretary understand it, but in many instances the foreman had some understanding of the system and had a good knowledge of the costs of their particular department. . . . It was in itself an education to the team to find that nearly every foundry "guide" could give details of costs and knew what those costs comprised. . . . Our American counterparts were constantly measuring money and time and were making continuous readjustments to save those vital commodities."

On the points mentioned so far, the teams were in practical agreement. The question of the relationship between employers and workers produced differences.

The reason is obviously the great gulf in outlook between the British and American worker, as exemplified in such matters as trade union organization. A universal acceptance of work study and time study, a willingness to work a two- or three-shift system, and a toleration of the threat of unemployment as a logical result of inefficiency all suggest that the adoption of American practices in handling labour questions should be viewed with caution.

It is evident, moreover, that even America has not solved the old controversy, going back to Adam Smith, of day-work versus piece-work as an incentive to higher output. The Men's Clothing team found that all factories they visited were on piece-work, and recommend the adoption of the system in this country. The Diesel Locomotive team found that piece-work did not exist, and recommended its abolition here.

Whatever the method of payment, however, management-union agreements seem in general to be based on a careful and objective assessment of the job, and a number of reports contain details of the way in which job evaluation and (in some cases) merit rating are carried out. These methods are not unknown in Britain, but undoubtedly could be much more extensively used.

News and Views BUSINESS

Mr. R. A. R. FIELD,

Chairman and Managing Director, Slaters and Bodega Ltd.

MANY of you will have read the comments in the papers on the recent report of the Catering Wages Commission and will realise that practically nothing has been done to relieve the industry of the complex wages structure it has been called upon to administer.

Without forethought, this ponderous Act, of unexampled complexity, was fastened on the industry. I would instance that 146 grades of workers are listed in the Orders and many of them have different wage rates which have to be reckoned in fractions of a penny. In addition, there are overtime rates, varying spread-over payments and compensation for work done at off times. Only well-trained clerical staffs can handle the resultant calculations and it is not to be wondered at that many hotel proprietors have said that they find it almost impossible to master these intricacies.

Mr. R. W. NEATHERCOAT, D.F.C.,

Chairman, Savory & Moore Ltd,

IN times of inflation all prices are too high, even the lowest, while, at the same time, the standard of the quality in relation to the price is rarely discussed.

This places any manufacturer of high standing in an invidious position. The great names in the past in any business were not founded on price alone, but quality and price combined. If manufacturers are now to be faced with the sole question of price, the future quality of goods must be endangered.

May I finish with a warning, therefore, to all those who, either through ignorance or intention, encourage this vicious circle, and quote some words written by Ruskin, which, although familiar to most businessmen, cannot be too widely understood. "There is hardly anything in this world that some man cannot make a little worse, and sell a little cheaper, and people who consider price only are this man's lawful prey."

Mr. ALAN P. GOOD,

Chairman, Heenan & Froude Ltd.

WE must continually progress in production technique and keep our capital equipment up to the highest standards of efficiency; we must be able to replace existing machinery if and when more efficient machines are marketed. But with this there is linked the question of company taxation which places a severe strain on available cash resources.

Every rise in the price of materials, in wages and in overhead expenses lessens the power of working capital to finance a given volume of production and, in our own case, materials alone now require 25s. of working capital to finance what each 20s. would do five years ago. Add to this the depletion of industrial cash resources by taxation and we have a situation which, sooner or later, will have to be faced on a national scale if the capital necessary to carry on a high level of production is to be readily available.

CALLING *of Business Men*

Mr. J. L. BROCKHOUSE, M.A.,

Chairman and Managing Director, J. Brockhouse & Co. Ltd.

AN immediate concern of management is the fast rising cost of living. Management cannot dissociate itself from any factor which causes dissent and dissatisfaction among the workpeople. It is natural that as the cost of living increases, demands for increases in wages should follow; we know, however, that the cure is not a reckless increase in wages and prices which would prove an aggravation. The Government should therefore study every possible means of economizing in order if possible to give some relief from taxes, as to most people, taxes—direct and indirect—form a substantial part of the cost of living. I am well aware that the contrary is foreshadowed by the Chancellor of the Exchequer, but if Government economies are not practised, the present serious inflationary tendency is bound to increase with all its evil consequences.

SIR PETER BENNETT, M.P.,

Chairman, Joseph Lucas Ltd.

THE company has a set programme for the continuous reduction of the cost of its major products with the object of reducing selling prices. This policy is of necessity limited to that portion of cost which is subject to our own control; fluctuations in the price of raw materials being outside our control. The manufacturing time set for any product is treated as the index of controllable cost and this is compared with the manufacturing time set in America for a corresponding product. Where the volume of production is similar, as in the case of aircraft equipment, the variation between British times and American times is negligible, but when there is a wide variation in output, as in the case of motor-car equipment, where the American volume is many times that of the British volume, then there is an appreciable gap. Nevertheless, this gap is being substantially narrowed each year.

Mr. SYDNEY GUY, M.I.Mech.E., A.M.I.E.E., M.S.A.E.,

Chairman and Managing Director, Guy Motors Ltd.

FROM time to time we hear that British prices are too high and in spite of all our efforts by improving methods of production, the costs continue to increase and ultimately our prices with them, but it still does not seem to be fully realised by the Chancellor of the Exchequer the extent to which the crushing taxation of this country plays its part in increasing the price of Britain's products. Industry has to make profits, not only for the purpose of giving a reasonable return on the money they have borrowed from the shareholders, but more particularly to build up reserves to enable the company to keep up to date, renew, and where necessary, extend its plant and buildings, which to-day, of course, costs two or three times the pre-war amount.

It seems to be overlooked, however, that as soon as we make profits the Government takes over half of it in taxation.

Good Design is Good Business

By JON HOPE

"GOOD design is good business." Businessmen, with no time at all to spare for pondering over well-established principles, might be inclined to accept such a statement with an impatient acknowledgement—and turn quickly to some more urgent topic. The unfortunate fact is—and businessmen know it only too well—that well-intentioned people, whose practical knowledge of obtaining the economies of bulk production is negligible, have talked about design of all sorts of merchandise—from furniture to fish-hooks—far beyond the point of monotony.

Happily, however, there are in this country men of outstanding ability who have no need simply to pay lip service to the value of design in industry. They are the men who know how to translate principle into practice. Unlike the more loquacious members of the community, they tend to be heard all too seldom. But when they do speak, it is more than worth while pausing to listen, for what they have to say about their own spheres can have a direct bearing on a wide range of activities.

Such a man is Francis John Stratton.

When Stratton speaks about design he does so not only in his capacity as managing director of Upsons Ltd., but with the authority of a member of the Council of Industrial Design and as a Fellow of the Royal Society of Arts.

When he says: "Good design is good business," the immediate question is—How does he put his ideas into action? There are several answers. Here is one: he has insisted on the Dolcis shoe company having its own design studio, claimed to be the first of its kind in Britain. But before taking a look at the studio, a few words about the organization of which it is a vital part.

"General providers," Upsons call themselves. It is an apt description for, apart from Dolcis footwear, the company handles lingerie, blouses, skirts, knitwear, and operates—among other things—a restaurant and a block of flats in Oxford Street. How did the business start? With a stall in Woolwich market! That was in 1863. The stall was opened by John Upson. The founder of the business was succeeded by his son, F. W. Upson. Then followed his grandson, J. R. Upson. During the war years, W. L. Moylan was in control and on his death T. N. Bird, M.B.E., became chairman of directors. Stratton has been managing director since the first day of 1947—a fortnight before he celebrated his forty-first birthday.

To-day, the Dolcis company owns more than 200 retail branches throughout the country. (Some of the shops still use the name Upsons Ltd.; others, London Boot Co.; a few, High-Life Shoes.

Dolcis has three factories of its own at Kettering but is fed by 178 others situated in the various centres of the shoe manufacturing industry not only in Britain but also in the United States, Italy, France, Switzerland, Austria, Czechoslovakia, Hungary, Belgium, Holland and South Africa. From some of these, Dolcis take as much as 80 per cent. of their output. The company is associated with Bally, of Switzerland, and with the Samuels Shoe Company, of America.

The Dolcis headquarters are—appropriately enough—in London's traditional leather market area. Here are situated the central buying, accounting and distributing offices and the extensive warehouse. Here, too, in what was once

This article in ONE MINUTE

F. J. Stratton was only 40 when, in 1947, he became managing director of the Dolcis Shoe Company, but he already had behind him a fine record of achievement, particularly as wartime Controller of Leather and Footwear at the Board of Trade. To-day he devotes himself to a bewilderingly diverse list of official duties apart from his full-time job at Dolcis, where, as this article shows, he has been responsible for interesting developments in the fields of practical design and "unity of presentation."

When Stratton speaks about design he does so not only in his capacity as managing director of the Dolcis shoe company, but also as a representative of the Council of Industrial Design, and as a Fellow of the Royal Society of Arts

an old store and is now a notable example of how, in accommodation, elegance and practicability can be allies, the design studio is to be found.

At its inauguration, Stratton said of the studio: "We are glad to make our contribution towards improving the standard of design in the industry as a whole—essential if traditional craftsmanship is to keep in step with modern merchandising of shoes as a fashion accessory."

How does the studio function? Original styles are born there. But to it also come shoes from all over the globe for expert scrutiny: some of these styles may be used without alteration but most are transformed so as to fill particular needs and demands. A high priced model, for instance, will be altered, without loss of fashion appeal, to enable it to be turned out in large quantities at a price the public are prepared to pay. Completed designs are sent to factories to be manufactured exclusively for Dolcis.

Stratton's attitude to designers is this: "They are employed in such a way as to enable their creative imagination to work without fear of want. We let them know that if they don't produce something immediately there is no cause for worry.

The managing director's belief in the selling power of good design does not stop at shoes. Far from it. His belief extends into every department of endeavour.

There is a favourite phrase at Dolcis—unity of presentation.

In general, the aim is that in whatever manner Dolcis manifest themselves to the public, then that public associates the result with Dolcis—and Dolcis only.

Consider, for example, the question of continuity of visual appeal originating with press advertisements. The rule is that the same type and the same drawings used in these adverts to illustrate certain lines must be incorporated into the show-cards and posters displayed in the shops simultaneously with the press campaign.

Synchronization is facilitated by the fact that the company looks after its own printing of show-cards, bills, as well as price tickets (half-a-million of these in twelve months).

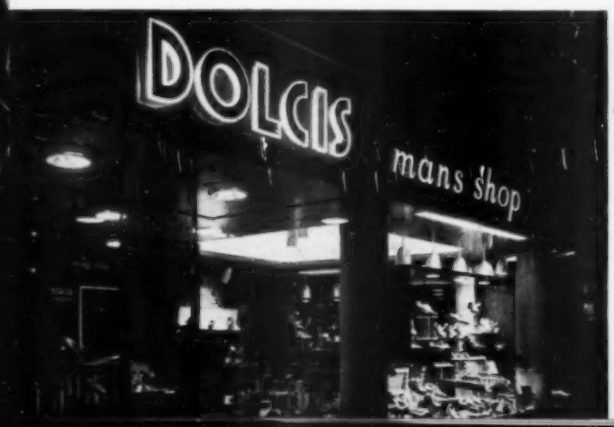
Unity of presentation is applied to the actual premises. There is a section at headquarters responsible for selecting and subsequently buying or leasing property. The company has a staff architect and Stratton has made a point of ensuring that he enjoys every freedom for practising his art. Showrooms that have come into being since the war's end provide a striking tribute to his policy. All of them, whether they cater specially for men, women or children; whether on corner sites or in the middle of a row; whether large or small, have their own characteristics yet share what can be called the "Dolcis look," with its accent on visual continuity between exterior and interior. Also, lines featured in window-displays are repeated inside the showrooms—another way of holding the interest of a hesitant customer once it has been aroused. Wares are placed in positions where people can handle them with ease. And no irritating veil of secrecy shrouds the prices. All merchandise on interior display is clearly ticketed.

The problem of originating and trying out window displays without upsetting the routine of the shops is solved by having a window for this purpose in the H.Q. display and sales promotion centre where mock-ups are made.

Good design and unity of presentation, and all the meticulous planning that go with them, would, of course, be of little avail without the sympathetic appreciation and active support of the selling staff.

Continued overleaf

Two different shops—each with its own characteristics, but each having an unmistakable "Dolcis" look.

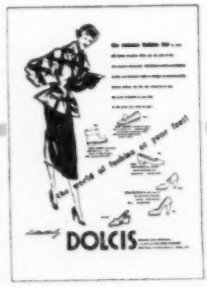


How, then, are the shop staffs imbued with the necessary enthusiasm? There are a number of ways. One is that they are given what Mr. Stratton puts high in the order of incentives—"Pride in being associated with a worth-while job." Staff training courses, held at H.Q., help to create that pride. Managers have attended courses. So have supervisors. Now it is the turn of semi-experienced and totally inexperienced staff. As well as engendering a fine *esprit de corps,* the courses have proved effective in improving the ability to sell; and by the end of each one the "pupils" have an understanding of the trade generally and a knowledge of their own firm in particular. The courses last two days. Each person attending returns, after three months, for a "refresher." A simpler training scheme is operated at each branch by the manager, according to a standard syllabus.

For the Dolcis company, as for so many other concerns, labour turnover is still considerably greater than before the war. Nevertheless, more than 70 per cent. of the staff have been with the company for periods of years. One obvious reason for this comparatively high degree of labour constancy is, naturally, the "family spirit" that abounds at all levels. But there are others. Wherever possible, appointments are filled by promotions. There is an elaborate pension scheme; a highly thought of sick-pay scheme (after three months' service—full pay for a maximum of 12 days, after three years—a week's pay for each year of service). Welfare facilities are comprehensive. In the canteens, mid-day meals cost just over a shilling. The staff have their own sports grounds. Dances are held nearly every month. And five times a year a house magazine is issued.

The burden of administration shouldered by the branches is a light one. Returns have been simplified as much as possible. One of them—the sales and stock return—wings its way weekly from each of the branches to the stock control section at H.Q. where a master copy is prepared for the managing director. (In the days when John Upson set up his stall in Woolwich market his customers had a choice between "laced" and "buttoned" footwear. And to-day? Stock is divided into 40 groups. . . .)

Two Dolcis buyers discuss new shoe styles with Eunice Wilson, Dolcis designer.



Unity of presentation—the press advertisement (above) links up with the showcard (left).

Stock control provides the link between the branches and the buyers. (John Upson used to restock his stall daily, the amount he purchased depending on how much cash he had taken the previous day. Now buying arrangements are made, according to a co-ordinated plan, six months before the shoes are on sale in the shops.)

In Britain, only a very small percentage of Dolcis shoes are marketed through shops other than its own. In the United States, Dolcis men's shoes reach their wearers *via* the Regal Shoe Company. Otherwise Dolcis deals direct with individual sellers. (On the advisibility of employing personal representatives abroad, Mr. Stratton comments: "In the main they tend to gobble up profits"). In Canada, the company will by next year deal direct with its customers. Shops are to be opened in Toronto and Ottawa. (They are being designed by the staff architect who has flown out to the Dominion). No fewer than fifty more sites in Canada are under review.

From the Kettering factories shoes are exported to every country in the world except the Iron Curtain states, but it is, above all in North America that the competition is "pretty hot." But Mr. Stratton states confidently: "We can meet it."

The shoes make their journey overseas wrapped in cloth covers and packed in high quality fibre boxes.

Stratton recalls that the dollar market was first tackled "as an exercise in good national behaviour." It is an exercise that, with each passing year, has brought increasingly profitable results — both to the Exchequer and to Dolcis.

Stratton was awarded the C.B.E. in the Birthday Honours of 1948. There is another decoration of which he can be justifiably proud. He holds the American Medal of Freedom with Bronze Palm. He was awarded this in 1947, after having been responsible for the supply of footwear and leather from British sources to the American forces in Europe. Mr. Stratton's war began in August, 1939 for he was a Territorial—a Gunner officer. At the time of being called to active service he was general manager of Lewis's Ltd., Birmingham. The war had been on for a year when he was transferred to the military staff at the newly formed Ministry of Supply. He became Director of Service Footwear and Leather Equipment. At that time, the Ministry was concerned only with the needs of the Army. The Navy and the Air Force were a law unto themselves. Typical of the man, he set about co-ordinating the requirements of all three services. Ultimately he became the Board of Trade's Controller of Leather and Footwear, and it was in this capacity that he served as a member of the Boot and Shoe Working Party.

It will be remembered that he headed the Mission—known as the Stratton Mission—to Germany in 1945 on hides, skins, leather (and substitutes), footwear and ancillary machinery.

Mr. Stratton retains a close association with the Board of Trade. He is, indeed, one of those astonishing heads of industry whose commitments seem endless. How he finds the time and the energy to devote to a bewilderingly diverse list of official duties, apart from his full-time job, is an inspiration in itself. He serves on the executive committee of the Dollar Exports Board. His responsibilities to the Board include handcrafts, furniture—and solid fuel! He sits on the Information Committee of the Council of Industrial Design, and is also the Council's representative on the Governing Council of the Rayon Industry Design Centre. He is chairman of the trade relations committee of the Footwear Distributors' Joint Council and as such handles negotiations with Government Departments on the utility scheme, purchase tax, imports. Anything else? Yes—a great deal, including membership of the National Advisory Council for the Motor Manufacturing Industry, of the Staff Management Association, of the Institute of Personnel Management and of the executive council of the Multiple Shoe Retailers' Association (to which Upsons as a company belong).

On behalf of Upsons, he can boast of globe-trotting as a permanent feature of his activities. (His buyers and designers have also cultivated the globe-trotting habit).

Stratton has a stake in the soil of Sussex. He runs a 275-acre farm—and, needless to add, sees to it that the place pays its way.

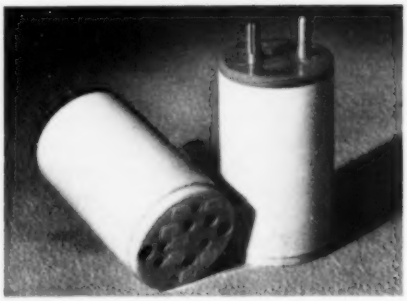
There is a saying in the footwear business—shoes never stand still. And especially those worn by Francis John Stratton.

6 AIDS TO UNITY OF PRESENTATION

1. **H.Q. design studio concentrates on producing original Dolcis shoe styles.**
2. **All shops—large or small—are given an unmistakable "Dolcis look." Company employ their own architect.**
3. **Lines featured in window displays are repeated inside showrooms, thus holding the interest of customers.**
4. **Current showcards in shops are similar in style and wording to press advertisements.**
5. **To avoid upsetting routine in branch shops, new window displays are first tried out in the H.Q. display and sales promotion centre.**
6. **H.Q. and branch staff training courses imbue the Dolcis spirit.**

Left: Lecture room in the Sales promotion centre with (far end) a dummy window display. Below: A corner of the design studio.

Look Out for WHAT'S NEW



PLUG IN ANYWHERE

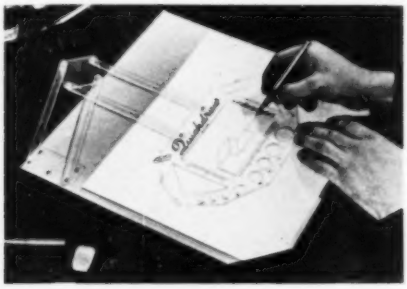
THE businessman may now use his electric shaver wherever he travels abroad, irrespective of local voltages. A British firm has produced an ingenious transformer adaptor which has removable pins, enabling the user to select variations between 100 volts and 250 volts a.c. The adaptor measures only a few inches and can be used for any appliance up to 15 watts.

CAST CUTTER

THE difficult, laborious business of removing plaster casts from patients in orthopaedic hospitals has been overcome by a lightweight portable electric cutter which does the job speedily and safely. The cutting action of the saw blade is a very rapid oscillating movement through an arc of a few degrees which cannot harm mobile skin but instantly slices through plaster.

FOR LETTERING

ACCURATE lettering for showcards, posters, etc., can be produced on paper, card, wood, metal or glass, with the Textograph. This instrument—which reduces lettering to mechanical simplicity—can be used with advantage by the professional (when it will save time) and the amateur (when it will save money). Stencils are of laminated plastic and there are fifteen styles of lettering available. Letters or numbers of different sizes and in Roman, italic, bold, etc., can be produced.



FOR DRAWING

ANYONE who is not a draughtsman by training or inclination can, with little experience, produce sketches, plans and outlines quickly and accurately to scale with a Quickdraw instrument. This consists of a Perspex template cut with mathematical accuracy to produce varying angles, triangles, rectangles and circles, with graduations in inches and millimetres. The template is toggle-hinged to a folder which acts as a drawing board. The maximum size of drawings is 13 by 10 ins.

PEOPLE OF VISION

MECHANIZATION DID THE TRICK

IT SEEMS a far cry from war materials to carnival novelties, yet in the case of Mr A. E. Bangham, proprietor of A. E. Bangham & Co., there is an important and definite connection. It was Mr. Bangham's experience in producing parts for aircraft during the war out of paper pulp that led to the perfection of a mechanized process to produce carnival hats which are now being exported all over the world.

Mr. Bangham (it seems a shame, with his name, that he does not make crackers) is no newcomer to the carnival novelty trade, and his new process was not discovered in a flash; like most improvements in production and manufacture it took time, patience and effort. He started the firm in 1925 in Walthamstow, having previously been an importer of foreign novelties. At first the going was hard, as he had to face the concerted competition of the established and traditional Continental manufacturers. For many years carnival hats, paper streamers, false noses and all those other multifarious items associated with parties had been made, by hand, in Germany and to a lesser degree in France.

Both these countries used old methods which relied on local skills and cheap labour; the process was crude and simple and there had been no attempt at mass production as it is known to-day. Mr. Bangham studied the old methods and modernised them using machines wherever possible and in this way increased his output, lowered his costs and was able to pay his workers fair wages and provide good working conditions.

The biggest problem was to try to mechanize the production of moulded *papier maché* hats which German competitors made in a crude but successful fashion at low cost. The war interrupted any developments, and the firm forgot the party atmosphere and switched to more serious things. These included aircraft parts which were made from fibre. This material became scarce, so Mr Bangham looked around for something else, and what was more natural than for him to turn to his traditional material—paper. While the war dragged on, his thoughts (when time allowed) turned to the idea of producing moulded paper pulp products by mechanical means. Experiments—costly and tedious—were carried out, and eventually in 1947 the first plant started operating.

Mr. A. E. Bangham, proprietor of A. E. Bangham & Co., inspects one of the paper pulp novelty hats made by his new process.

Eight years had been spent in perfecting this plant, which was followed by another in 1949. To-day, Mr. Bangham can look with pride and satisfaction on his efforts, for his firm are turning out 60,000 carnival articles every 45-hour week and even this could be considerably increased. Briefly, the process is as follows: wood pulp is ground down and then mixed with various hardening ingredients suitable for the items being produced. The wet pulp is forced into moulds by compressed air, ejected and then dried in gas fired infra-red drying ovens. Machines have been arranged to reduce handling to a minimum, so that time, space and labour are not wasted.

From the two plants come a constant stream of accurately moulded novelties ranging from miniature policemen's helmets to lifelike sombreros which are 18 inches in diameter. Sixty per cent. of the output goes overseas—to Europe, Australia, Canada and other areas.

Having found the answer to the problem of producing articles by this compressed air method, Mr. Bangham is still not content, for he visualises other products which could be made by the same process. No doubt his agile mind will find a practical answer to these possibilities, providing that raw material shortages and defence demands do not overshadow them.

People of Vision cont'd on next page

PEOPLE OF VISION

Continued from previous page

RUNS A BUSINESS ON OUTWORKERS

MADAME Maria Szanto is one of those rare people, an artist who is also a business woman. Born in Hungary, trained in Vienna and Paris as a tailor and dress designer, she came to this country to develop hand-knitting. In so doing she founded a business which not only upholds all that is best in the classic tradition of British clothes, but also makes ingenious use of the talents of part-time outworkers.

Madame Szanto first handled knitted clothes in the early thirties. In those days jumpers were knitted to standard designs and pressed out to the right shape. Madame Szanto was asked to design a jumper that fitted. She did so, and this was really the beginning of her career in commerce.

To produce the first design, Madame Szanto had to study the whole technique of knitting. Thus she learnt a great deal about wool, and discovered a whole range of stitches which could be used for the production of knitted clothes that would really fit. Armed with new designs, she came to England in search of labour and the chance to start out on her own. She found both, and now looks with quiet satisfaction upon a business which was worth £10,000 in 1950 and ought to double its value this year.

Abroad she deals with stores like Neiman-Marcus of Dallas, Texas, and Bullock's-Wilshire of Los Angeles—fabulous institutions for which there is no real equivalent in this country. Her individual customers include royalty ("No names, please"), society women, and such personalities as Irene Dunne, Vivien Leigh, Ava Gardner, Coral Browne, Sophie Stewart, Ellen Pollock and Lilli Palmer.

From the business point of view one of the most remarkable things about Madame Szanto is the way she trains and uses the outworkers. When she started, she argued something like this: "Knitting is a craft to which most women make some pretensions. Very well, let us see how good they are. I will advertise for part-time knitters. Those who reply will be given a ball of wool and a model piece to knit according to my instructions. If they pass they can knit pieces of my garments and I will make them up. If they do not pass, I will advertise again."

Hungarian born Madame Szanto sketches new designs at her Kensington headquarters.

Ten per cent. of the women who replied to the first advertisement passed the test, and Madame Szanto has never been able to improve on that figure. At the time of writing she has a force of 250 part-time knitters, and all are highly skilled. They need to be. There are 14 measurements to the privately ordered dress, suit or coat; 10 pieces go to most garments other than coats. Four knitters are involved. The wool may be one of three different grades (2/28, 2/32, 2/40); the design of the garment may require any one of many complicated stitches. But no matter how many people, pieces or stitches are involved, the tensions must match and the fit must be perfect.

Obviously a great deal depends on the way things are managed at the headquarters in Kensington. Here Madame Szanto is helped by three key people—Mr. Frederick Luck (who is also secretary of the company), Miss Galbraith and Mrs. Fleming. Suppose there is an order from a wholesaler for a number of dresses. Mr. Luck finds the yarns in the right colours while Miss Galbraith adapts the instructions and chooses the knitters.

Everything then comes back to Mr. Luck, who dispatches wool, order, time limit, instructions and pattern to each of the knitters. Four weeks later back come the pieces, and up they go for washing and making up under the supervision of Madame Szanto and Mrs. Fleming.

Every year Madame Szanto gives two shows which are attended by the editors of fashionable magazines. Her models can also be seen in the collections shown by the International Wool Secretariat. Her clients in Britain, the United States, Canada, South America, South Africa, New Zealand, Morocco, Sweden, Switzerland and Ireland include many famous names, and the business continues to grow in the same way that it was started and built up—by personal recommendation.

And what of Madame herself? Clearly the creative mind—one might almost add, the mechanical genius—behind it all, Maria Szanto will say little or nothing about herself. Small, dark and with a lively sense of humour, she prefers to talk about the fascination of knitting or the skill of Mrs. Fleming. Unaffected as she is, she handles clothes with all the authority of the craftsman who knows how to organize and sell.

How a Famous Store Modernised their Accounting System

By C. BRYANT

By mechanising their deposit office—where all customers' accounts are handled—the Army & Navy Stores have found they can get through more work, more efficiently, using less space and less staff. The equipment, which includes 24 accounting machines, will have paid for itself within five years of the date of purchase.

AMONG business organizations in this country the Army and Navy Stores are unique. Everybody knows the shop in Victoria Street, with its long and impressive facade. Hundreds of times a day bus conductors call "Army and Navy!" and half the population seems to gather itself together for another round of looking and buying. But there is something distinctive about the people who enter this shop; they have a bearing which does not always belong to the crowds milling round the more spectacular institutions in the West End.

Eighty years ago the Army and Navy Stores were a co-operative organization for officers serving in the army, navy and militia. They were, quite literally, a closed shop. Professional soldiers and sailors held shares in the Stores, and had to put down a deposit before their wives could bring home the groceries The men in red and the men in blue, finding that this led to stability and convenience in personal accounting, brought up their children in the same tradition. Hence the military complexion of some members of the present generation of customers.

The passage of time brought other things beside fresh faces to the premises in Victoria Street, namely higher prices, increased overheads, and the need for more customers than could be found among the sons of military gentlemen. In due course, the Army and Navy Stores were opened to the general public; nowadays they are run in much the same way as any other department store.

One thing that did not change was the emphasis on service to customers with regular "deposits" or accounts. During the war most retail trading turned into a cash and carry business. Since then, however, more and more have gone back to the idea of dealing regularly with one establishment. The Army and Navy Stores have more than 50,000 of these customers, and new accounts are opened daily. The number of cash and carry customers is also increasing rapidly.

In an organization built on tradition it is not surprising to find that some of the methods have in the past been a little quaint: efficient enough (this must be said at once) but rather heavy handed. The department which we have chosen for our story is a good example. Still called the deposit office, it is in fact the place where all the work is done on customers' accounts.

At one time the section employed 120 clerks who kept hand-written ledgers and produced statements and pass books. During the war many of these people left to join the Forces, and it was impossible to get replacements. The immediate result was that the Army and Navy Stores were unable to open any new accounts.

The shock to the Board must have been considerable. At any rate they decided to mechanize the whole department, and after examining various alternatives, installed the following equipment: 24 accounting machines; nine fire-resisting cabinets for ledger cards and statements; eight adding machines; two address plate embossing machines and two printing machines, and eight cabinets for the address plates. In five years from the date it was purchased, this equipment will have paid for itself.

The change to mechanized accounting was done by stages over 18 months. Working on Saturdays and Sundays, the staff balanced the old hand-posted ledgers and transferred the proved totals to the new ledger cards. It is worth noting

Four Benefits

The advantages of mechanization were listed by Mr. M. A. Hamilton, a director of the Army and Navy Stores, as follows :

1. With half as many people we can do more work now than we did before the war.

2. Statements for one month are issued within the first few days of the succeeding month. The advantage to the customer is that he can remember making the purchases; the advantage to us is that the money owed comes in more quickly than ever before. A prompt statement elicits a prompt response.

3. The cumulative position of a customer's account is always available, just as it is on a bank account. This makes light of the monthly proving of accounts within the office.

4. Accounts are printed instead of being hand-written ; this removes any fear of illegibility.

that one operator and a machine handle the equivalent of four to five of the old hand-posted ledgers, so it is true to say that the new system saves space as well as staff.

Next stage in the transfer was to use the new ledger cards for preparing monthly statements, which were built up with the aid of the accounting machines after being headed with customers' names, addresses, account numbers and ledger folio numbers.

The last part of the operation was done with the aid of embossed plates, in order to save the immense amount of typing associated with this kind of work. Two sets of statements were prepared in this way, so that the balances could be transferred when the first set of statements had been completed and dispatched.

Embossing the plates and heading all the statements was a big job, but it will never have to be done again. Now that the office has been mechanized, the work of the addressing machine department is confined to producing headings for those customers who have done business during the month and therefore need statements. They must also deal with changes of address and create plates for new customers.

The rest of the story is best told in the words of Mr. A. Arnold, manager of the deposit office, who gave an account of the established routine in his department.

Every morning all bills from the counter books are sent up to the deposit office, where they are sorted into alphabetical order. Then they are passed to the ledger clerk in charge of letter A, or B, C, etc., who sorts them into departmental order and compiles the total for each department on an adding machine. The adding machine slips are next passed to the accountant's checking office, where they are marked off against duplicates from the counter books. This completes the departmental sales analysis and the compilation of the daily journal.

The next operation is similar. Using an adding machine, a ledger clerk prepares a pre-list total of all the bills that will be used for posting a particular ledger. When this is done she sorts them into strict alphabetical and account number order.

There are 25 ledgers, each covering a different section of the alphabet. The pre-list and the bills are passed to the accounting machine operator, who uses them to post the ledger cards and prove the figures. The statements themselves are built up in the same way except that more detail is given *and the work is done by a different person.* This prevents mis-posts and means that the original bill is seen by at least two people. If they should interpret the written figures in different ways, the totals will not agree and the mistake will be discovered and corrected on the same day.

In addition to bills from the counter books, the ledger clerks also deal with cash received through the post, credits passed for goods returned, and all credit sanctions

Cash and credits are posted to customers' accounts and receipts

Bills are totalled by department and ledger on electric adding machines.

Pre-list and bills are passed to accounting machine operators, who post ledger cards and prove the figures.

are sent in the usual way. Sundries (post orders with money) are kept entirely separate from the main accounts.

Checking Customers' Credit

The posting work is done by machine on to a special blue ledger card, and any deficiency or surplus is handled by the ledger clerks. For the purposes of credit sanction, all customers having accounts are listed in strip index books in alphabetical order. Each entry shows the name and address in full, the account number, the ledger folio number, and the amount of credit that can be sanctioned. When a customer wants to take away goods on account above a certain value, the assistant 'phones the ledger clerk, who refers to the strip index to verify the existence of the account and check whether it is in order.

Orders coming through the post are sanctioned in the same way, and are then passed by pneumatic tube to the order office for dissection.

In addition to sundries and credit sanctions, the ledger clerks are also responsible for debt control. All cases of arrears are taken to the supervisors, who refer difficult cases to the manager. The usual routine is for the ledger clerk to write to customers who have not settled their accounts. If the money is not forthcoming, the manager of the department looks into the financial status of the customer and advises accordingly.

Mr. Arnold is helped by a statistics clerk, who prepares monthly totals of goods sold, cash received, cheques paid, goods returned, etc., etc. These are posted by hand into the deposit office summary book, and enable the manager to see totals of debits and credits in all their detail. They also give him a picture of the rise and fall of business done on account in each department of the shop.

We have dealt with the transition period and the new routine for dealing with ledger posting, credit sanction, debt control, sundries, preparation of invoices and statistical summaries. There remains the question of monthly proving, plus a brief reference to the performance of the department as a whole.

First, the problem of proving When the accounting machine operator does her posting on the ledger cards she builds up a proof sheet which gives the totals for goods sold, cash received, returns, etc., for that ledger. These totals are extracted by the supervisor every day and written on to a summary sheet. At the end of the month this sheet is balanced and the total debit or credit should agree with the balances extracted in the course of preparing the monthly statements. The ledger clerk is responsible for proving the ledger, and dispatching statements.

Finally, a word about performance. Sometime ago (on the 4th, 5th and 6th of December, to be exact) between one third and half of the pre-war staff in the deposit office, prepared and dispatched 17,600 accounts for the month of November.

Before the war, this big job would scarcely have begun. The Army and Navy Stores have come a long way since they wrote all their "members' deposits" in one ledger. They mean to go much farther.

A general view of the deposit office, where operators and machines prepare and dispatch over 17,000 accounts every month.

Calculator Slashed their Exports Figure-work

By ROBERT SPARK

When Hawthorn Baker began building an export side to their business, the paperwork looked like reaching top-heavy proportions. Upon renting a key driven calculator, however, they were able to get through the work comfortably each week. In addition, as time went on, they discovered many uses for the machine apart from those for which it had been acquired.

CAN a firm with only 45 employees support a calculator? To the uninitiated it seems improbable, but in actual fact there are many firms of half this size making profitable use of such machines. To Hawthorn Baker Ltd. a calculator was not only a necessity, but one of the very foundations on which they built up their export business.

Two years ago Hawthorn Baker's directors felt sure they were losing money through slow paper work which only a machine could improve. The machine they obtained on a rental basis has proved its value and made a definite contribution to the success of the firm, yet it costs them 1/6d. per day.

Their principal product is printers' furniture—pieces of metal in varying lengths and widths which are used in the making-up of pages of type, blocks and so on ready for the printing foundry or press. They must be perfectly accurate and have an absolutely flat surface—irregularities causing the printed matter to be "out of register." Printers' furniture is made of wood or metal. Hawthorn Baker have departed from the traditional, and produce a complete range in duralumin.

The range consists of 350 different sizes, and there are other products (all of which are for the printing trade) which are also made in many sizes. The very nature of these items results in a number of administrative complications. These can be summarized as follows:

(1) *Orders, although frequently small in value, are invariably complicated because of the range of sizes of furniture.*

(2) *Because of* (1), *the extension of invoices is a lengthy process involving many calculations.*

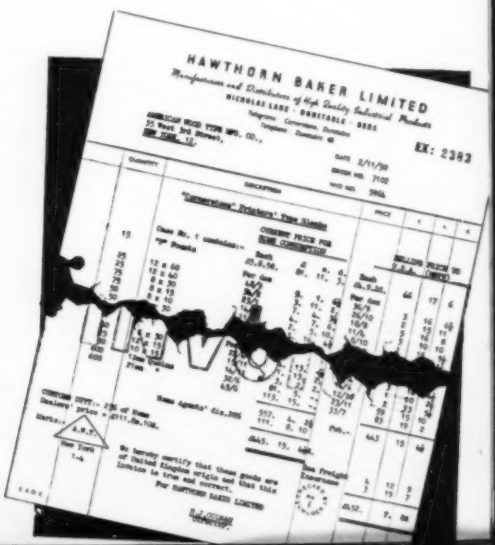
(3) *Works loading has to be dealt with carefully and on a flexible basis so that there is a minimum of delay on any order.*

(4) *Careful control is necessary to see that unduly large stocks are not carried.*

Apart from the above, which can be regarded as standard problems arising every day, there are others of equal importance. At the time they were considering the purchase of a calculator, Hawthorn Baker were developing an export business which brought with it a host of new problems, many of them of a mathematical nature. Briefly, the difficulties were the fact that Continental dimensions of printers' fur-

Right. A typical invoice for an export order.

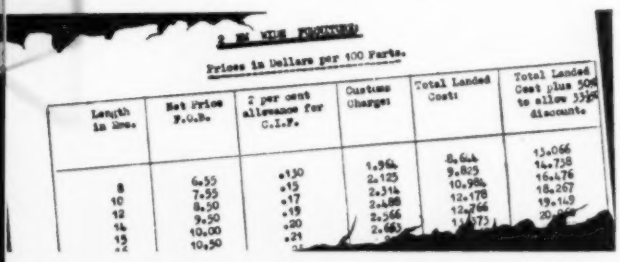
Below. Part of the U.S. agent's price list.


HAWTHORN BAKER LIMITED

Manufacturers and Distributors of High Quality Industrial Products

NICHOLAS LANE · DUNSTABLE

EX: 2383


Prices in Dollars per 100 Parts.

Length in Ins.	Net Price F.O.B.	2 per cent allowance for C.I.F.	Customs Charges	Total Landed Cost:	Total Landed Cost plus 50% to allow 33⅓% discounts
8	6.55	.130	1.964	8.644	13.066
10	7.55	.15	2.125	9.825	14.738
12	8.50	.17	2.314	10.984	16.476
14	9.50	.19	2.488	12.178	18.267
15	10.00	.20	2.566	12.766	19.149
[illegible]	10.50	.21	2.663	[illegible]	[illegible]

Now—as if I should know!

IT'S ALWAYS THE SAME with the directors. Ask questions that would take three weeks to answer, and want the figures by three this afternoon. This morning they wanted to know the value of our present stock of counter fittings. They should ask the Roneo people to bring us more up to date. We want Roneodex, that's the equipment for the recording of awkward facts.

Every recording problem is an individual job. Roneo answers each individually.

RONEO VISIBLE RECORDS **GIVE THE ANSWER**

RONEO LTD · 17 SOUTHAMPTON ROW · LONDON · W.C.1

Branches throughout the country *Telephone:* HOLborn 7622

niture were different from British standards; several other countries had unique dimensions of their own; and every country had a different currency with a different rate of exchange.

Invoices were being delayed, everything had to be done "by hand" with no more than a ready reckoner to assist the staff. To speed up the process would mean a considerable increase in office personnel which in turn would entail a bigger wages bill and increased costs. On top of this there was nowhere to house any additional clerks. Those were the problems that had to be faced.

On investigation, it was found that one key driven calculator in the hands of a trained operator could do all the work required in a few hours a week. A machine was obtained on a rental basis, the terms including maintenance service.

An operator was trained at the machine manufacturer's school, and as she became more proficient, the machine was put to other uses such as costing, statistics and shop loading. A complete price list for an overseas client could be prepared in an hour or so instead of half a day. In this way the machine became a useful weapon for sales promotion purposes; in the case of Continental enquiries where speed was a necessity, orders were obtained which would otherwise have gone to foreign competitors.

In checking up on overseas competition, Hawthorn Baker found that one Dutch firm was able to offer smaller pieces of furniture at lower prices, although the cost of larger sections was dearer. With the aid of the ubiquitous calculator a check was made on all orders received and their value, over a given period, and total values by sales of each size of furniture were computed. The same assessment was made on the basis of the Dutch firm's prices, which proved—to the directors' surprise—that on the total volume of sales, Hawthorn Baker's products were cheaper.

The answer to this competition lay in recasting their price list—a simple enough suggestion until the mechanics of the job are examined. To arrive at the correct new prices for the whole range meant taking into consideration such items as freight, insurance, discount to agents and import duty. Prices had to be changed from guilders to pounds and *vice versa*. All this work could only have been accomplished in pre-calculator days by literally stopping the business while it was done.

The building up of increased sales in the dollar area was another example of the machine's versatility. They had agents in the U.S.A. and Canada, but it was felt that there were opportunities to expand sales. One of the directors decided to go to America and investigate the position on the spot. He had to take with him adequate information and figures and be able to answer any questions that might be raised in discussions.

Their range of furniture was cheaper than that of their American competitors, but it had to be clearly proved to the agent just where the advantage lay. The U.S. agent's price list had to show quite plainly the retail price, profit, import duty, insurance, freight cost and manufacturer's price—all in dollars of course. Each item had to be priced per 100, and not by the dozen as was the custom in

Continued on page 82

With a second calculator in use, two girls now handle all the invoicing.

A four-part invoice set.

*"Let those who may complain
that it was all on paper
remember that only on paper
has humanity yet achieved
glory, beauty, truth, knowledge,
virtue and abiding love."*

GEORGE BERNARD SHAW

THE BOWATER PAPER CORPORATION LIMITED
Great Britain · Canada · Australia · South Africa · U.S.A · Norway · Sweden

Short Cuts to OFFICE EFFICIENCY

PREVENTING LETTERS AND MEMOS FROM GOING ASTRAY

AN efficient method of keeping a check on documents, from the time of their initiation until they are ready for filing, is to impose on them a rubber stamp of the type illustrated on this page.

Here is a key to the numbers appearing in our illustration: **(1)** Space for stamping "clock" showing date and time of receipt. **(2)** Space for consecutive number of letter as registered. **(3)** Space for stamping "FILE" by Executive when document is ready for filing. **(4)** Spaces for Executive's initial and staff's initial to whom document is to be passed for information and, if necessary, reporting on. The person referred to would initial in the space below his initial **(5)** before passing to next person or back to Executive.

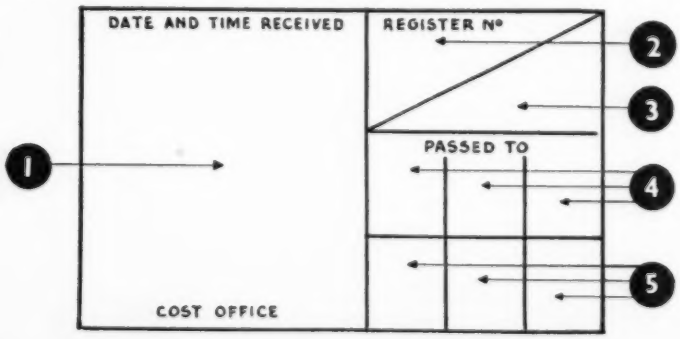
When the document has been dealt with and can be filed, the Executive responsible stamps "FILE," by means of a rubber stamp, in space **(3)**.

For the registration of documents a register should be prepared showing consecutive number, date of letter, reference, whom from, subject, "passed to," where filed and date filed. The current date should be entered each day (which should correspond with date in **(1)** of box on document).

After entering the document (with a short description) under subject matter, the consecutive number should be entered in space **(2)** of "Box" stamped on document.

When the document has been dealt with and can be filed, the Executive responsible having stamped "FILE" in space **(3)** of the "Box," the entry in the register should be completed by date-stamping the day of filing and entering the file reference.

If the system is carried out completely it should be possible to keep track of all documents, from the time they are received and entered to the time they are filed. Even then the record is useful for tracing documents if any of the following points are known (*a*) Approximate date of either the document or its receipt; (*b*) Name of sender; (*c*) Subject matter; (*d*) Registered number.



CYCLE BILLING CUTS THE INVOICE RUSH

HOW American department stores and other concerns cope with the problem of securing an even flow of office work is described in the Anglo-U.S. Productivity Council's report on *Management Accounting*.

All sales dockets are sent daily from the sales counters to the accounting department, where they are filed alphabetically under the customers' names. Each working day of the month is allotted a letter of the alphabet, and each customer's invoices and statements are dealt with on the particular day which corresponds with the initial letter of his name. Thus Mr. Abrahams will always be invoiced on the first working day of the month and Mr. Zweig will be invoiced on the last.

Invoices Listed

On the appropriate alphabetical working day, each customer's batch of invoices is listed on an accounting machine, producing a statement for the past month showing dates, reference numbers of each sales docket and any balance unpaid from previous months.

The statement is prepared in duplicate, one copy of which, with the actual sales dockets, previously microfilmed for reference purposes, is posted to the customer. The other copy is filed in the alphabetical section from which the dockets were taken and remains there until payment is received, when it is withdrawn. If the remittance only partly discharges the balance due, a fresh statement for the unpaid items is substituted. The state of any customer's account is shown by the unpaid statement plus any subsequent sales dockets. Notes of credit status and limits are also kept in the alphabetical section.

By this method the load of work is spread evenly throughout the month, and monies due arrive in a steady flow, which facilitates cash budgeting.

THE NAME ON YOUR DESK...

. . . means a lot to you

Behind the "Abbess" symbol their is over 75 years' experience in furniture making. Sound construction and the use of carefully selected timbers, scientifically treated to withstand varying office temperatures, ensure long and satisfactory service. "Abbess" furniture is designed to combine efficiency in use with pleasing appearance . . . and prices, thanks to efficient production methods, are reasonable.

The Desk illustrated above is the Model 5340, size 48 ins. by 27 ins. by 30 ins. high. price £17 · 0 · 8 inc. Purchase Tax, carriage paid in England and Wales. This Desk is fitted with the Abbess insert tray, as illustrated.

Ask your local distributor for particulars, or write to

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NEW for your OFFICE

No Tangles

THE picture of an excited office worker attempting to untangle himself from a snarled and knotted telephone cord while answering a call has its amusing side, but the humour is lost when this happens every time the 'phone rings.

The *Tellef* is a light-weight plastic attachment approved by the G.P.O., which fits on to the telephone cord near the receiver and prevents knotting and kinking of the surplus flex. This surplus is wound on a revolving, spring-operated plastic drum which automatically winds and unwinds as the receiver is removed from, and returned to, the instrument cradle.

Easily fitted, the *Tellef* causes no additional inconvenience to the telephone user. The length of flex remains virtually unchanged, unwinding when the receiver is lifted to the ear and automatically re-winding when it is replaced.

—(*Enquiry Ref. No.* 03/20.)

The Tellef cord holder attached to standard G.P.O. 'phone.

Typist's Chair

AN improved model of the typist's posture chair is adjustable and makes use of a positive single locking device. Upholstered in leather cloth, it has a stove enamelled frame and is fitted with non-scratch metal or rubber feet.

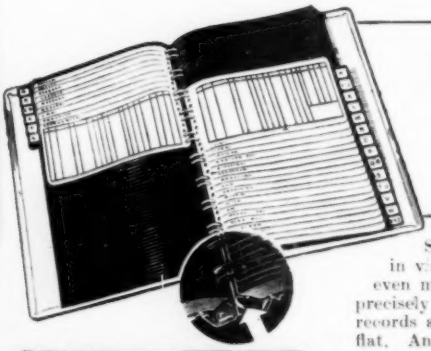
For ease of posture, the chair has a sprung seat and sprung swivel back. It is easily adjustable, with double strength pivot arms, ensuring long wear of the movable parts. Chair dimensions include: seat height: 17in. to 21in.; overall height: 31in.; width: 16in., and depth: 14in.

—(*Enquiry Ref. No.* 03/22.)

Compact Accounting Machine

THE advantages of comprehensive mechanized accounting are now within the reach of the smaller business with the introduction of a new, low-cost portable single register accounting machine. Simple to operate, this 12-key keyboard model is small and compact yet will perform all normal accounting tasks.

Ideally suited for handling sales and purchase ledgers, stores accounts, cost records, payroll and P.A.Y.E. records etc., the machine will do 14 distinct automatic operations. These include printing of dates, descriptive symbols and



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Speed of reference. . . . Speed of entry . . . these are the vital factors in visible records. The complexity of modern business demands both. But, even more, the rising cost of clerical labour necessitates both. . . . Which is precisely why Shannoleaf has been designed. It is a *streamlined* system; the records are visible, the binders are light and slim, the writing surface consistently flat. And Shannoleaf can be applied to any purpose demanding *fast* recording. Many records are standard. Others can be readily designed. And with each system goes the preliminary research that ensures you have *just* the ruling to give you the *maximum* service—in facts—in speed. Just put the word "Shannoleaf" on your letterheading and full details will be sent you by return of post.

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HERE IS A COMPLETE TYPING UNIT . . . Specially designed to carry typewriters and calculators. Rubber tyred, swivel wheels enable the "VICTROTYPE" to be easily manoeuvred, without fear of damage to carpeting or floor surface. Typewriter cover falls into position at the back and is securely held by folding supports. Accommodation is provided on the side for calculators, adding machines, ledgers etc. Handy felt-lined drawer for copy and accessories. Crackle finished in black, green, brown or grey to choice, the "VICTROTYPE" is robustly constructed of steel and occupies a small area of office space

Write for Further Details

VICTROLEC LIMITED

261-3 VICTORIA ROAD, ASTON, BIRMINGHAM, 6. TEL. EAST 0215.

debit and credit balances, as well as normal subtraction and tabulating processes.

The machine has a 13in. or 18in. dual feed carriage and features simple one-hand operation using 12 numeral keys in simple 1-2-3 sequence. The operator only has to press the motor bar after significant figures have been set up on the keyboard. The incorporation of instantly interchangeable control plates affords easy selection of a comprehensive range of special automatic features.

Automatic balancing and line by line proof of accuracy, with easy operation, guarantee that a new operator readily masters the machine.

—(*Enquiry Ref. No.* 03/24.)

The 12-key low-cost portable single register accounting machine.

Lamp With Poise

"MODERN" and "counterpoised" describe the characteristics of an ingenious new lamp particularly adaptable to office use. The lamp incorporates an adjustable feature which allows it to "stay put" in any position. This is controlled by a patented rolling weight which eliminates springs and ensures equilibrium even if the base is inclined at an angle.

The lamp is poised at the end of strong and slender aluminium alloy tubes enclosing the cable, and is adjustable at a touch to any position within a sphere of 4ft. diameter.

The extendable arms are heavily chromium plated and the remainder

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OAK, MAHOGANY
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Sizes: 4ft. 6in. × 3ft.
5ft. × 3ft.
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The Desk made specially for Branch Managers of a leading Bank. The top lined in hide, locks to drawers. Specially soundly constructed interior.

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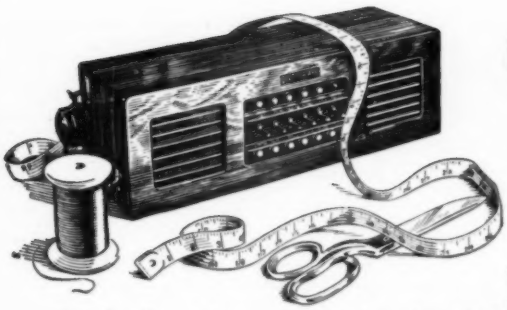

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The Dictograph Organisation takes pride in the way in which it studies the individual problems of each client, thus ensuring that the telephone system installed is *exactly* what is required—in fact 'tailored' to the client's requirements. A wide range of instruments and a highly skilled planning and engineering staff, guarantee that a Dictograph system will give you the most efficient desk-to-desk contact in the world.

Whether you require two or two-hundred connections, a Dictograph System can be 'tailored' to *your* requirements. A 'phone call or postcard will bring you full details of the unique Dictograph System.

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T2A

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Bare needs apart, why do they have buying preferences? What makes them insist on particular brands? There are many answers, but one of them is undoubtedly the satisfaction they derive from a particular presentation and the assurance of reliable quality. The efficient use of self-sealing cellulose tapes influences both presentation and the protection of quality. In hundreds of instances, Transotape is effectively promoting sales through enhancing pack presentation. Transotape induces the buyer to buy again and again through helping to maintain factory-freshness in shop and home. In that way the buyer becomes a customer and goodwill is given more tangible expression.

You can ALWAYS depend on **GOSHERON** *Packaging* **TAPES** *as others have done since 1909*

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of the lamp is attractively finished in durable stoved enamel, colours including metallic golden beige, black or cream. A plastic cable is available to match.

—(*Enquiry Ref. No.* 03/21.)

Re-designed Line Poster

AN important feature of the re-designed *Banda Line Poster*, ledger posting machine, is a device for ejecting the posted ledger cards vertically into a tray beside the operator and stacking them in their original order. An automatic damping system and improved drum design are further attractions.

For applications including sales and purchase ledgers, pay roll work, stock records, sales analysis, etc., the *Line Poster* accomplishes line by line transfer of original entries to ledger accounts and records on as many different cards or sheets as desired. The master sheet, simply made with a hectographic transfer sheet, can be written, typed or prepared on any accounting or tabulating machine. The reverse or negative impression thus produced serves as the master.

Once this master sheet is in place, ledger cards, record sheets, etc., are fed in and a simple depression of the treadle completes the posting process. Alignment is instantaneous and registration automatic. Operation is easily learned within a few hours.

The drum only revolves once to each depression of the foot pedal, and an adjustable mirror is fitted which allows the reference number, account number or name to be read straight from the master. This enables the operator to select the correct card for posting without having to consult an additional reference copy.

A dual coated, fine quality transfer sheet has been developed to ensure good masters. Giving clear and perfectly clean reproduction, the transfer sheet, together with master paper, can be supplied sprocket punched. Makers recommend this method for the preparation of continuous masters in conjunction with tabulating and accounting machines.

—(*Enquiry Ref No.* 03/23.)

This counterpoised lamp "stays put" in any position.

Who has the last word on carbon paper . . .

and why . . ?

How did the make of carbon paper used in your organisation come to be chosen . . . who orders it now ? Investigations show that in many cases executives do not know the answer to these questions. Development and research by the Columbia organisation are such that you cannot be sure you are using the *best* until you have tested Columbia "Titan" the carbon paper that satisfies all the eleven proven essentials for perfect carbon copies. Make a comparative test NOW . . . Your time will be amply repaid.

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FOR
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SYNCHRONOME
IMPULSE TIME SYSTEM

will solve these

inseparable problems

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Any time controlled installation can be supplied on purchase outright or rental terms. For details apply

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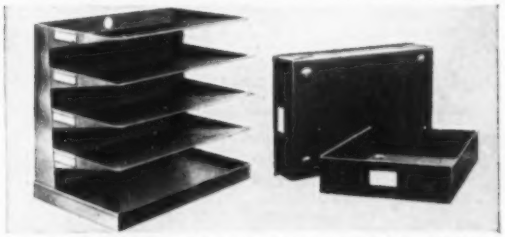
Harvey

STEEL STATIONERY CABINETS AND CARD INDEX CABINETS.

STEEL BOOK RACKS AND STEEL WASTE PAPER TUBS.



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All Harvey Steel Furniture and Equipment is of modern design, sound construction, and of the highest quality. Finished in Olive Green stoved enamel it is perpetually durable, fire-resisting, and proof against damp and vermin. Prices are competitive. Send for Catalogue No. BU 800.

Harvey

G. A. Harvey & Co. (London) Ltd.
Woolwich Rd. London, S.E.7

Exports—1950 Was Record Year

EXPORTS of office machinery in 1950 amounted to £5,968,451, compared with £3,935,000 in 1949 and £3,365,000 in 1948. The addition of metal furniture brings the total for 1950 up to £8,196,774, or nearly £2,000,000 more than the previous record set up in 1949.

Typewriter exports amounted to nearly £1,460,000, compared with £793,000 in 1949 and only £560,000 in 1948. Exports of accounting and similar machinery reached £1,325,868, compared with £615,000 and £425,000 respectively.

The main overseas purchaser of British equipment in 1950 was again Australia (£1,203,000), followed by the Union of South Africa (£450,700) and Sweden (£354,000). Canada is becoming an increasingly important market, taking £232,000 worth of machinery in 1950, an increase of 50 per cent. over the 1949 figure and 140 per cent. over that for 1948.

Trends in the production and exports of office machinery are shown in the graph on page 37.

★

ALTHOUGH the space available at the Scottish Business Equipment and Management Exhibition at the McLellan Galleries, Glasgow, which opened on February 20, was nothing like as great as at the Granby Halls, Leicester, a record number of fifty firms exhibited. This is the first exhibition the Office Appliance Trades Association has organized in Scotland since before the war.

The Association was requested by the Glasgow Chamber of Commerce and the Glasgow Engineering Centre to arrange this show as a service to Scottish industry, even though only token stands could be used. Booking for a large-scale exhibition could not be made before late 1952.

★

THE December, 1950, issue of *Office Appliances*, of Chicago, published a series of reviews and forecasts from executives in the American office appliance industry. In addition, similar statements were published from Mr. W. E. Sculthorp, president, National Association of Distributors of Office Equipment, Mr. W. Lorraine Haig,

Continued on page 76

... AND YOU WILL DECIDE ON DU-AL

Conveyors?

4 LAMSON "MOBILES" Will Meet Your Requirements

TYPE A
with 11′ long boom operating from horizontal position to a maximum of 7′ 6″.

TYPE B
with Low Pivoting boom 10′ 6″ long. Can be fed at almost ground level. Loading level does not vary with delivery height. Maximum height 7′ 6″.

TYPE C
Similar to Type B but with 13′ 6″ boom giving maximum height of 9′.

TYPE E
Slat Conveyor with Hydraulic Lifting Jacks. 13′ 6″ boom gives maximum height of 10′.

Types A, B & C carry a live load of 112 lbs at 60 ft per minute whilst Type E will handle loads up to 3 cwt. There is a Lamson Model to suit your requirements. Write to Dept "D".

LAMSON *Telephone: LAD. 2424* *Telegrams: KELYWIL, HARLES, LONDON.*
ENGINEERING CO., LTD. WILLESDEN N.W. 10.

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APRIL 30—MAY 11
CASTLE BROMWICH
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STAND D210

100% NIGHT SECURITY

The BLICK WATCHMAN'S CLOCK gives the greatest security possible to your premises.

Satisfy yourself and your watchman by installing this modern watchman's control system embodying the following points:

- **Strong eight-day movement**
- **Unlimited stations**
- **Automatic Recording keys**
- **Multi-colour recordings**
- **Records can remain in the clock at week-ends**
- **Special record book to maximise effectiveness of control**
- **Foolproof and reliable**

BLICK
WATCHMAN'S CLOCK

Details from:
BLICK TIME RECORDERS LTD.
2 Blick House, 188/190 Gray's Inn Rd., London, W.C.1
(*Terminus 2722, 3 lines*)
Also at Birmingham, Cardiff, Leeds, Manchester, Newcastle and Nottingham.

Continued from page 74

president, Typewriter (and Allied) Trades Federation, Mr. Frederick Ellam (then) president, Office Appliance Trades Association, and Mr. C. J. Mortimer, president, Association of British Business Equipment Manufacturers.

★

FOLLOWING the announcement that the Registrar-General's department had chosen Powers-Samas equipment to correlate information obtained in the national census in April comes the news that the Swedish government, also engaged in a national census, has signed a contract with Powers' Swedish agents, L. M. Ericssons, Driftkontroll A/B, for the supply of 65-column universal automatic key punches, sorters, and universal printing-counting sorters.

★

BOMBED out of their headquarters in the City during the war, Underwood Elliott Fisher Ltd., had little choice when it came to selecting other premises. They were fortunate in obtaining a showroom and offices in Pall Mall.

Since the end of the war increased staff and business put a strain on this limited accommodation and more spacious quarters were sought. New offices, complete with a large show-room, have now been established in St. George's House in New Oxford Street.

The building—which is one of London's newest—was due to be built prior to the war but construction was held up until after the cessation of hostilities. The interior decoration is attractive and modern as befits a firm who are engaged in "speeding the world's business."

Extensive use has been made of Holoplast panelling in cream and green shades, set in alloy framing. The lighting is entirely fluorescent and the flooring is of oak blocks.

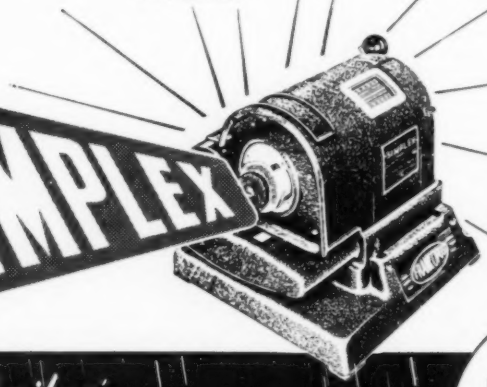
All the executive and administrative offices are now centred in the one building and they occupy approximately 6½ thousand square feet of floor space.

Underwood Elliott Fisher's new showroom in St. George's House, New Oxford Street.

AND NOW!

THE SIMPLEX

FRANKOPOST OFFERS AN OUTSTANDING NEW DESK MODEL!



SIMPLEX – Eliminates Postage Stamps and the Post Book.

SIMPLEX – Prints all values up to 6½d in ONE impression.

SIMPLEX – gives automatic accountancy by two meter readings.

SIMPLEX – prints YOUR Advertisement or "Return Address."

SIMPLEX – can be justified by a mail of 10-20 letters per day.

The Small Mailer's Postal Franker

Other "FRANKOPOST" MODELS

MULTI-VALUE
(Hand or Electrically operated)
Prints up to 29/11½d or lesser maximum for Inland Letters—Parcels and Airmail

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(Electrically operated)
High Speed Franking and Sealing Machines

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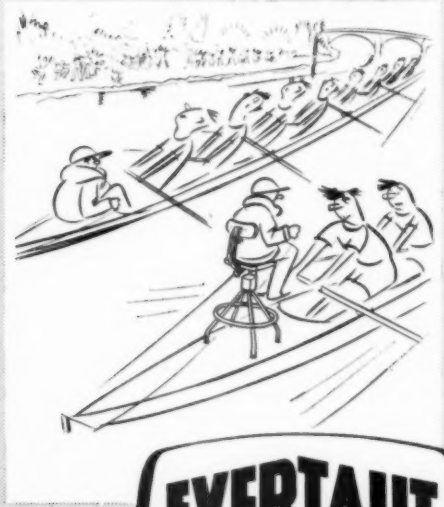
90 REGENT STREET, LONDON, W.1 REGENT 2249

Take a seat...



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(PROPRIETORS J. B. BROOKS & CO. LTD.)

if it's it will make all the difference

The range of Evertaut chairs is wide enough to seat practically all workers of all trades and vocations. Great research has gone into the designing of each model with the view to giving correct posture and anatomical support at all times thus reducing to a minimum the fatigue which costs employers so many productive "Man hours".

B.S. 26. A chair specially designed for the draughtsman and the telephonist, giving the additional height and correctly placed tubular footrest so necessary to good posture and comfort.

B.S.£6. A luxurious executive chair which combines comfort and correct posture. This chair can be supplied in a wide variety of upholstery coverings.

Please write for catalogue "A"

OFFICE & WORKS SEATING

WE ALSO MANUFACTURE:

SHELVING · CUPBOARDS AND LOCKERS · WORK TRAY STORAGE SYSTEMS · PLANFILE CABINETS · CANTEEN EQUIPMENT · OFFICE TABLES

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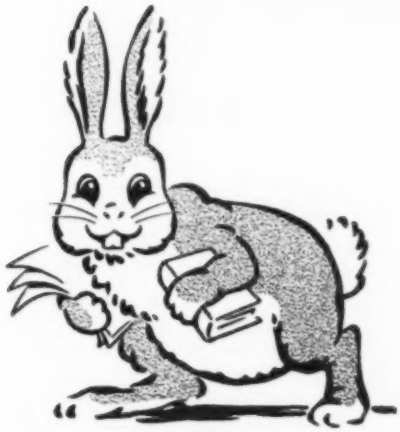
Phone: Birchfields 4587 (4 lines) Grams: "Evertaut Birmingham".

London Office: Kern House, Kingsway, W.C.2. (HOL. 0238).



YES, RABBITS!

Your staff are rather like rabbits — yes, rabbits! They vanish into the warren of your premises and aren't seen for hours. It's not their fault of course, their work takes them away from their desk, but they *do* have a way of vanishing just when you want them, don't they? Your clients probably have 'rabbit trouble' too: maybe they are too polite to say anything—perhaps they just 'try that other firm'. It's amazing just how much Goodwill is lost every minute a client is kept waiting while the man he wants is being 'hunted'. Pulling rabbits out of hats—or any part of your building—is a job for the 'Dicto-Call' Staff Location System. Interested? A 'phone call or postcard will bring you details of the way we can solve this big problem—out of Petty Cash.

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DICTOGRAPH TELEPHONES LIMITED
Chief Sales Office
200 Abbey House, Victoria Street, Westminster, SW1
Telephone Abbey 5572
BRANCHES THROUGHOUT THE COUNTRY

S2A

Making Fuller Use of Blind Workers in Industry

By HAMISH ROBERTSON

The blind in this country represent a potential labour force capable of making a valuable contribution to the national economy. Firms already employing blind persons testify to their cheerful efficiency, and a new report* reveals the range of tasks they can undertake to be far wider than is commonly supposed.

1. LABOUR POTENTIAL

MORE than 36,000 of Britain's blind persons are within the normal working age range of 16 to 65. Of these, about 11,000 are employed or training for employment. Among the remaining 25,000 of "working age," it is estimated that about 3,000 could take up employment if given the opportunity —that is to say, if the existing facilities for their rehabilitation, training, and placing by specialist services were expanded.

With the efforts now being made to bring all newly-blinded persons into the employment field, the Working Party on the Employment of Blind Persons considers that eventually a labour force of 16,000 to 17,000 will be available to employers.

2. WHAT THE BLIND CAN DO

In Factories

A survey of 100 industrial firms revealed that their blind employees are performing 32 different tasks, mainly in light engineering. The majority are on machine operating, inspection and assembly work. Some are operating milling machines; some are on bench drilling, and power and fly press operating.

Blind workers are sometimes slower than sighted workers, but their powers of application are often greater. This St. Dunstan's man is engaged on assembly work.

Others are capstan operators. The blind appear to be particularly successful in this work, and sometimes their output has considerably exceeded that of sighted workers. Another operation in which blind men's work has proved better than average is fettling, which, since it consists in removing surplus metal from iron castings, is judged by touch rather than by sight.

Most blind inspectors and viewers are employed on simple inspection work involving the use of "go" and "no go" gauges. Where the work demands, micrometers and vernier gauges, specially manufactured to meet the needs of the blind, can be obtained.

Assembly jobs often consist of repetitive work involving the assembly or packing of small components. In one factory a blind man has been trained to assemble the dashboard panel of a well-known make of motor van. He was taught by a placing and training officer in co-operation with the firm's training staff.

The above processes by no means exhaust the list of factory jobs which the blind can do. For example, one of several wartime surveys showed that, theoretically, there were many operations in the cotton industry which could be done by blind people.

It would be dangerous to gen-

*Report of the Working Party on the Employment of Blind Persons. His Majesty's Stationery Office, 1/9.

BLIND MEN ARE ALREADY DOING THESE JOBS

Assembly
Bag Lugging
Bench Drilling
Blue Print Machine Operating
Book Stacking
Capstan Lathe Operating
Counting of Finished Products
Deburring
Fettling
Fly Press Operating
General Labouring
Glass Cutting
Inspection
Labour Management
Lampshade Binding
Lapping Machine Operating
Mattress Making
Milling
Packing
Paper Box Manufacture
Paper Folding
Power Press Operating
Rethreading Bolts
Riveting
Rope Splicing
Salvaging Returned Bottles
Shorthand-Typing
Stores Checking
Telephone Operating
Telephone Order Clerk
Welfare Work
Wire Splicing

eralize on the standard of efficiency of blind workers, but several firms have reported that on some operations their output is greater than that of sighted workers. Other firms have said that although their blind workers appear to be unable to work as quickly as their sighted colleagues, their application is greater, which compensates for any reduction in speed. This is said to be most marked in repetitive work. In many firms the absentee and labour turnover rates among the blind are lower than among other workers.

The employment of blind men and women in industry is largely a development of the past ten years. It is clear that they are able to do a far wider variety of work than was at one time thought possible. Businessmen would do well to investigate this potential source of labour. In the words of the Working Party: "The time has come . . . to build up in other industries the same kind of knowledge based on experience that has already been gained in the light engineering industry."

In Offices

Blind persons make efficient shorthand-typists. They take down as quickly as sighted operators, but lose a little time during transcription. This is because they must read off a phrase in Braille shorthand and then type, whereas a sighted operator can read and type simultaneously. This does not, however, have any appreciable effect on the overall result.

With adequate training, blind typists achieve such facility in the use of a typewriter that they are able to produce elaborate tabular and display work. Copy typing is outside their scope, but they can work from recording machines.

Instead of the familiar note book and pencil, a blind person uses a small portable machine. The shorthand notes are recorded on paper tape and the machines can be operated quietly at high speeds. The only adaptation required for a typewriter is the fitting of a Braille scale. Both the shorthand machine and the scale are supplied to the blind at no expense to the employer.

The Working Party says: "We have been informed by supervisors of typewriting departments in which blind persons are employed that the standard of output and accuracy of blind shorthand-typists is fully comparable with that of their sighted colleagues."

In Telephone Exchanges

In this country there are many thousands of smaller switchboards where signals are given by means of a doll's eye and drop-shutter indicators. Most of these have up to 10 exchange lines and 50 extensions and can be operated just as rapidly and efficiently by a blind operator as by a sighted one.

The blind operator relies on sound and touch to detect the drop of the indicator. As a further aid to the expeditious and accurate clearing of traffic, the G.P.O. has, where required, adapted switchboards by fitting stud supervisories, without charge to the employer.

Blind telephonists cannot be em-

The blind can be trained to operate woodworking machinery, including circular saws.

ployed on switchboards where the signals are made by means of flashing lights or where multi-position boards are used.

A sighted telephonist may be required to operate part of a multi-position switchboard and this a blind operator cannot do.

A post which can well be filled by a registered blind person who has a measure of vision is that of reception clerk-telephonist. Such posts are common in firms in which the switchboard is not busy enough to provide full employment.

The Working Party comments: "Business and professional firms which have their own switchboards are already employing a considerable number of blind telephonists. Those employers who have had experience of blind operators speak highly of their efficiency, cheerfulness and courtesy in answering calls. . . . We believe that there must be many more firms which would be glad to employ blind telephonists."

3. PLACING AND TRAINING

Recruiting blind employees is made as easy as possible for the prospective employer. Placing services are operated by: London and Essex County Councils, North of England Industrial Employment Service for the Blind and the Birmingham Institute for the Blind. At present, placings average 500 a year, half of them being in London.

A special residential course for the blind has been set up at the Government Training Centre at Letchworth, where candidates receive eight weeks' instruction in certain processes in the light engineering industry, *e.g.*, centre lathe operating, precision instrument inspection and repetition work.

Many blind people, however, are trained for employment by industry itself and some firms have instituted their own well-organized schemes of training. Training facilities for eventual industrial employment include the services of a Government-sponsored training officer who gives instruction to blind persons on employers' premises. Processes for which instruction has so far been given on this basis include: the operation of capstan lathes, boxmaking machines, power presses, and riveting machines, as well as drilling, confectionery packing, wheel true-ing, label threading, film joining, precision inspection and assembly work.

There are also in this country special facilities for training shorthand typists and telephonists.

The Working Party's approach to the problem of finding employment for blind people is realistic: "An employer has to make his business pay, and no plan for placing blind people in industrial employment can hope to succeed on any other basis than that the blind worker can and should do a full week's work in return for a full week's wage."

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LEABANK CHAIRS LTD.
19 Clifton House, Euston Road, N.W.1.

CALCULATOR SLASHED THEIR EXPORTS FIGURE WORK

Continued from page 64

Britain. All this figure work would have been out of the question for a firm the size of Hawthorn Baker if the calculator had not been available to carry it out. Separate lists of a similar nature were prepared for Canada, which had a different rate of exchange. All these figures were prepared in 10 days without disrupting normal work.

As Hawthorn Baker are currently exporting their products to 28 countries it is easily understood that paper work might have reached top heavy proportions for so small a firm. To-day, with a total payroll of 65, there are eight office staff and a second calculator has recently been obtained.

All the invoicing is handled by two girls. The average value of a home order is £15. On receipt of an order a four part set is typed listing the items required, the customer and despatch instructions. The top copy is used for file purposes and also to cast up on receipt so that a ready check on value of sales in hand (by commodity) can be obtained. The second copy goes to the stores for the order to be made up and is then returned to the office with any discrepancies marked. The third copy is used for making up the works loading sheet and the last copy goes out as an acknowledgement to the customer.

Preparing Invoices

Invoices are prepared with the aid of the calculator which is used to carry out the necessary extensions, agent's discount, etc. This is also a four part set, the top copy being the customer's invoice; the second copy is for the accounts department; the remaining two are advice notes which go with the goods to the customer, one to be signed and returned as a receipt.

Export orders are, of course, considerably more complicated as will be seen from the example shown on page 62. All the calculations are worked out by the operator on the calculator, checked and finally typed.

While the smaller firm may have doubts as to the wisdom of investing precious capital in machines this particular example proves that all the advantages of mechanization are obtainable with no outlay. Hawthorn Baker's business, while possibly differing from many of similar size, is not, basically, unique and it must remain for the individual firm to decide whether such machines are a means to a profitable end or not. What has been established in the light of Hawthorn Baker's experience is that to obtain value from office machinery is not the prerogative of the large organization.

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WITH THE

Everest *CALCULATOR*

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- INTERNAL CARRIAGE
- 13 COLUMN CAPACITY
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IMMEDIATE DELIVERY

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Everest TYPEWRITERS
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Adjustment can be effected to within a quarter inch of any card or document size. The drawers can be divided as required for any size of record, and the units are so constructed to give solid cabinet strength and appearance.

Photograph shows the Amselock Partition element being inserted for immediate use in one of the four drawer sizes.

Amselock have achieved a successful solution to the problem of providing maximum filing capacity in minimum space. Four standard drawers differing only in height, provide filing capacity for any dimensions of card, file or paper, etc.

This internal flexibility can then be combined with the established Amselock system whereby individual cabinets are readily integrated into assemblies or desks, combining functional efficiency with maximum space economy.

Problems on filing continuously arise—AMSELOCK can make an important contribution to their solution. Consultation with us places you under no obligation.

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Survey of Modern INDUSTRIAL EQUIPMENT

VENTILATION

Fume Remover

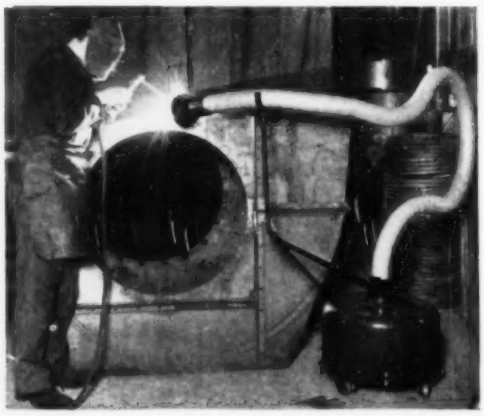
THE *Weldafume* machine is a compact, portable unit designed to remove and filter fumes from arc welding, or smoke and heat from general welding and industrial operations. The unit improves working conditions considerably and gives the industrial operator better vision, cooler working area and absence of harmful fumes at source.

The *Weldafume* filters the fumes and removes the heat, dust particles etc., from either a confined space or away from machinery which is throwing off harmful or irritating material from work in progress. As the name implies, the equipment is of particular value when used in connection with arc welding processes, especially when operations are being carried out in confined spaces or inside large drums.

A flexible 10ft. by 3in. metallic hose leads to the main part of the unit, in which is incorporated a special asbestos-base, fire-proof cloth filter, containing over 1,000 square inches of filtering surface. The unit is economical to operate and is powered by a three- or single-phase motor arranged in the vertical position and enclosed within a fire-proof filter.

The power and filter unit rest on a heavy fabricated base which runs on castors and is covered over by a metal cover. The metallic hose, available in sizes to meet individual requirements, is supported by a tubular bracket, allowing adjustment of the hose to suit particular working conditions.

—(*Enquiry Ref. No. M.51/30.*)



Absence of fumes, better vision and working conditions result from the use of the Weldafume machine.

PROCESS EQUIPMENT

Portable Welding Set

THE discovery of electric welding was the discovery of a fast, cheap method of joining ferrous metal surfaces together easily while still retaining a high degree of mechanical strength. This method has been widely adopted and can often be carried out by mechanics who have not had wide experience with arc welding equipment.

The *Mark III*, air cooled, portable electric welder is a recent and popular unit now available to manufacturers, maintenance shops, or those interested in a model which will provide a reasonably heavy weld deposit. Producing an infinitely variable range of amperage heats between 15 and 100 amps, this unit will run a 6g. electrode. Makers recommend it for use in heavy transport repair work, welding of substantial steel sections, plant maintenance, etc.

Amperage variation is obtained by turning the handle on top of the strongly constructed tank. The whole unit

Rapid production grinding of small parts is obtainable with the Excel bench surface grinder.

is portable, and will connect to all A.C. voltage mains between 190v., 240v., and 380-480v. (50-60 cycle). Operating instructions are supplied.
—(*Enquiry Ref. No. M.*51/31.)

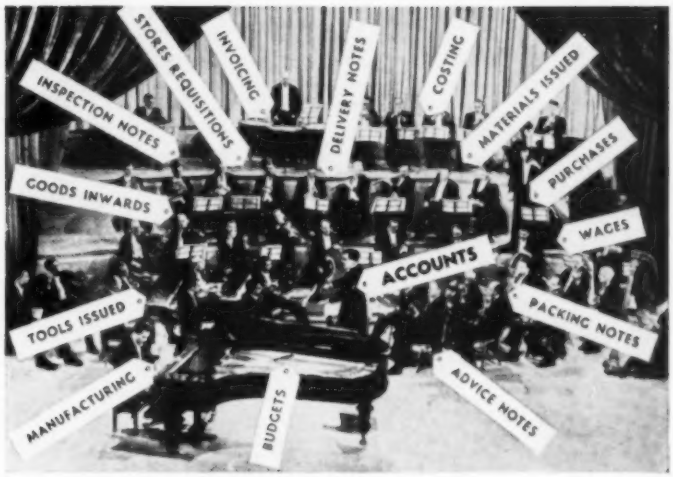
GAUGES AND TOOLS

Bench Surface Grinder

A NEW bench surface grinder, designed to give rapid production grinding of small parts, particularly dies, will also prove useful in the assembly bay. Operating with precision accuracy at high output, an incorporated fine feed arrangement enables increments of feed to be made to .0005 inches.

If necessary, a magnetic chuck or machine vice can be mounted on a close-grained cast iron base plate. It is also possible to clamp work directly on to this base. The column, also cast with a solid flange, and precision ground between centres, incorporates a ball bearing fitting at the top to absorb downward thrust of the radial arm, besides reducing friction when swivelling the wheel head.

The wheel head combines the heavy duty 1½-h.p. specially ventilated electric motor which incorporates the grinding spindle. Preloaded precision ball bearings are employed and are designed to with-



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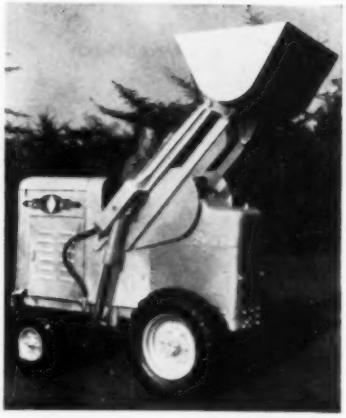

Designed to work in a confined space, the LH/1 hydraulic loader.

stand heavy radial and thrust forces whilst maintaining accuracy.

The radial support arm has been designed to provide a sufficiently long bearing surface on the column which will not allow lift of the wheel head after a cut has taken place. This point is important when relying on the micrometer dial for gauging work thickness. The maximum surface of work to be ground is 10 in. by 5 in. and the speed of the wheel spindle is 2,800 r.p.m.

—(*Enquiry Ref. No. M.51/32.*)

MECHANICAL HANDLING

Compact Loader

A COMPACT, highly mobile hydraulic loader which will load in excess of 20 tons per hour has been designed for work in confined spaces. It will readily negotiate obstacles commonly found in warehouses, ships' holds, small yards, etc., and will traverse ramps and gangways safely.

The *LH/1* has a petrol engine (diesel power can be supplied if required) developing 35 b.h.p. and giving speeds up to 12 miles per hour. Two speeds in either direction are possible and the loader has a turning circle of 15 feet. Hydraulic action is both powerful and speedy (lifting time: five seconds to 8ft. 9in.) and the bucket control permits full or partial discharge.

Simply controlled, the *LH/1* has a welded constructed chassis with articulated forged steel front axle.

Steering is by heavy duty box and a novel split track rod. Girling brakes are employed. The unit is available with alternative types of bucket, fork lift, dozer blades, etc.

Dimensions include: bucket width 42in.; maximum dump clearance 5ft.; bucket capacity 10½ cubic ft.; overall length 10ft. 6in.; width 4ft. 3in.; and weight 1 ton 15 cwts.

—(*Enquiry Ref. No. M.*51/33.)

MACHINERY

New Features

THE lathe, as a standard piece of equipment, tends to remain a more or less static design. So two features of a new 5 in. centre S.S. and S.C. precision lathe are particularly interesting. First is the swivelling head feature, and second the use of unconventional round bed guides.

With this type of head stock it is now possible to cut taper threads without the use of a taper turning attachment. Taper shafts and bores can also be machined by power traverse, dispensing with the use of hand feed which often produces a doubtful finish. An unlimited speed range is also incorporated by use of a double gear reduction unit. Two standard speed ranges are available—66-610 r.p.m. and 100-912 r.p.m.—together with a special low speed of 33 r.p.m. Ranges cover approximately ten speeds—up to 3,000 r.p.m.—can be supplied.

The bed, the second unconventional feature, is made of three 1½ inch diameter carbon steel precis-

The unconventional bed guides can be seen in this illustration of the S.S. Lathe.

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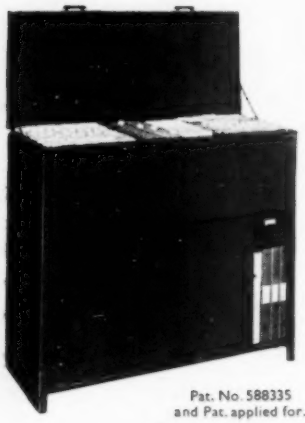

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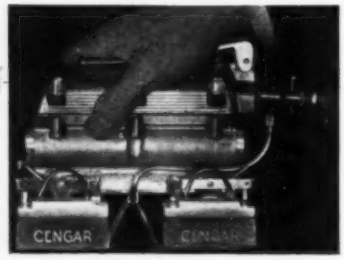
ion ground bars mounted in a right-angled triangular formation. The makers claim that this design ensures greater rigidity and extra long wear. Also, the saddle, featuring greater bearing area and additional rigidity, incorporates six large bearings and an apron mounted in an unusual box formation. The automatic power traverse for sliding and surfacing is driven from the independent keyway in the leadscrew, thus preserving the threads for screwcutting only.

—(*Enquiry Ref. No. M.*51/34.)

PORTABLE POWER TOOLS

Fast Action Sander

THE makers of an air operated sander claim to have designed a machine which copies hand operation sanding yet greatly increases the speed of the job. This fast action unit, featuring twin-pad reciprocation, produces strokes of approximately $\frac{3}{8}$in. at controllable speeds from dead slow to 3,500/4,000 reciprocations per minute.



The Cengar air operated Sander.

Speed is controlled by palm pressure on a trigger, and as there is virtually no vibration a constant rate can be easily maintained. Pads work outward and inward, allowing the cut to follow the grain, thus producing a "no whirl" finish.

The machine—made from non-rust materials—can be fitted with a water spray attachment, flow being push button controlled.

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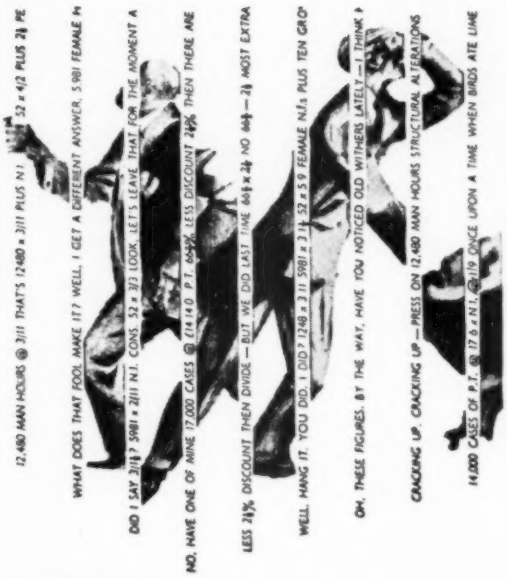

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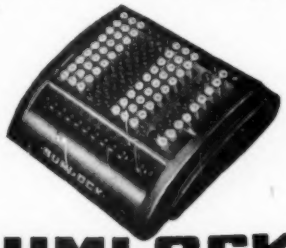

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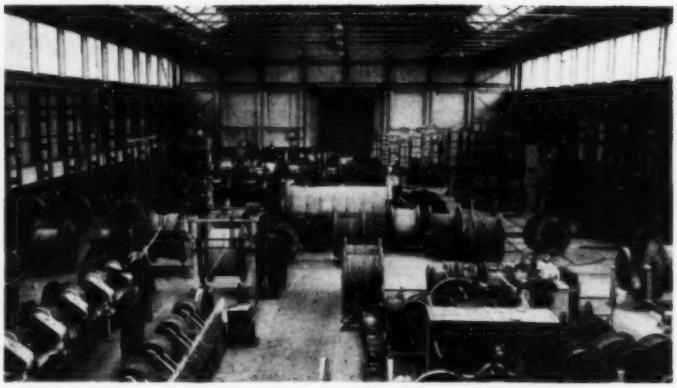
HOW FIRMS PREVENT ACCIDENTS

Continued from page 45

the safety engineer, the personnel department and the supervisor concerned. *The safety engineer inspects any tool which may have been involved in the accident and, if suspicious of it, attaches a red disc labelled "not to be operated." This disc stays on until the tool has been cleared.*

After each accident an investigation is held which is attended by the injured person, his supervisor, a witness, a shop steward and the safety engineer. From these investigations many lessons are drawn for the future.

The company do not hesitate to replace press guards which may have become outdated, or take any other accident prevention measures which they consider necessary, even though this means capital expenditure.



Machinery cannot be fully guarded at Crompton Parkinson's Derby works, but safety is ensured by clearly defined gangways and good lighting.

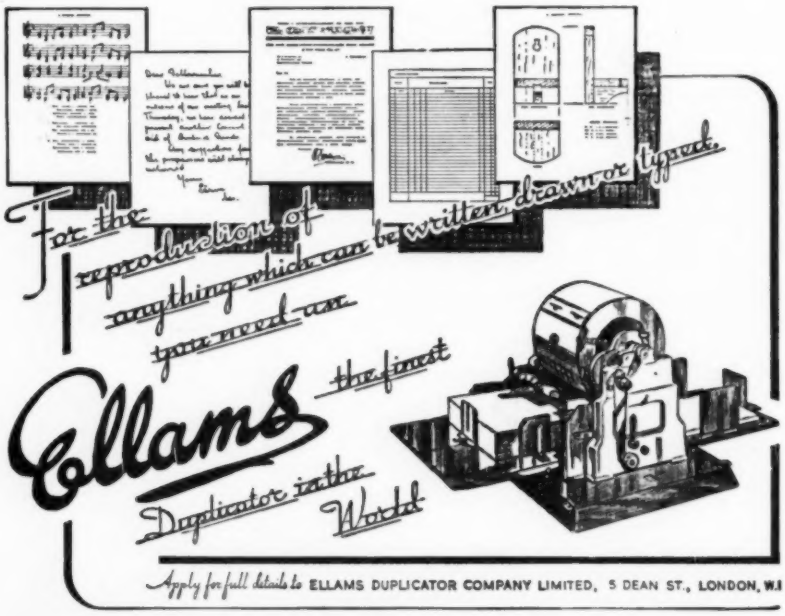
Colour-Conscious

Miscellaneous Firms

American factories do things on the grand scale. Often colour schemes are devised *for each department*. These build up into one co-ordinated programme in which safety colours play their part. Here are examples of how firms use different colours for different departments.

In their machine shop International Harvester use bluish, grey greens which are neither too bright nor too deep and appear subtly different under natural and artificial light. They are cool, restful,

Continued on page 92



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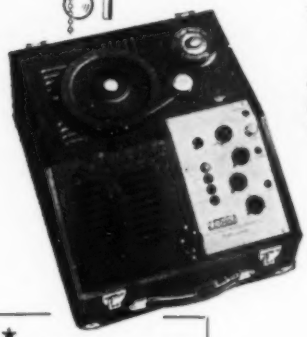

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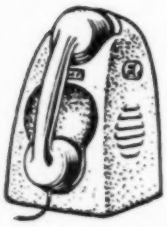

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Continued from page 90.

lack monotony and are ideal for rooms occupied over long periods.

In their operating rooms the New York Telephone Co. use light grey on all walls except one, which is painted a colour known as sunlight. The idea is to relieve monotony: the pale grey is non-distracting, and the Sunlight colour provides visual and emotional relaxation.

The third example shows how several colours—including those specially designed for safety purposes—can be used in one room.

In one of their mills, Powdrell and Alexander Inc., makers of curtains, use ivory on the upper walls and tan on the dado. These colours were chosen to warm up what must otherwise be a cool room.

The machines are painted horizon grey to keep seeing conditions at their best. Unguarded pulleys are marked with so-called Alert Orange, an obstruction is painted with high visibility yellow and black stripes, and a colour named Precaution Blue announces the electric controls.

Since eyestrain induces fatigue and fatigue leads to accidents, some American companies use a technique called Three Dimensional Seeing. The idea is to provide colour contrast between the working area of machines, the material being processed and the moving or dangerous parts.

The technique has been applied by various firms to packaging machines, machine tools, sewing machines, textile machines, and to woodworking machines.

Warm, Clean Air

Projectile Engineering Co. Ltd.

Here is a British firm who believe in using harmonized colours throughout their factory. In the past 18 months the under-sides of the roofs have been painted primrose yellow, whilst the steel work has been coloured light green. Machine tools have been coated grey, touched off with red for the oil points and nipples. White lines indicate right of way and traffic paths for barrows and motor trucks. Dark shadows and poor visibility have been eliminated by the installation of fluorescent lighting over benches, machines and rights of way.

Working conditions have been made more comfortable (therefore less conductive to accident) by replacing coke combustion stoves with modern heating units. To keep them out of the way, and achieve good circulation, the units have been placed high up off the floor. Now the workers breathe warm, clean air instead of smoke and fumes. They enjoy good health, and are less prone to dangerous eye strain, headaches, fatigue, and spells of dizziness.

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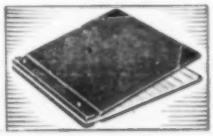

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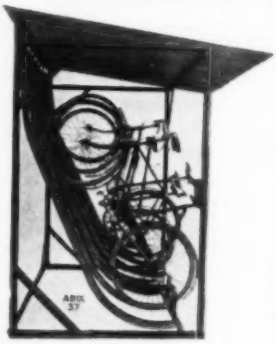

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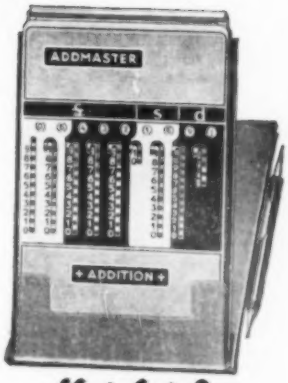

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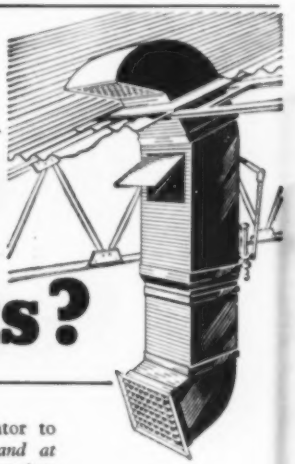

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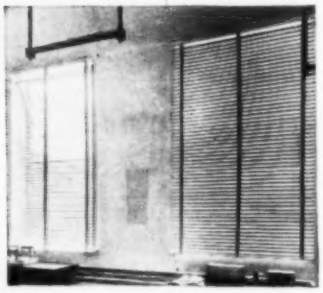

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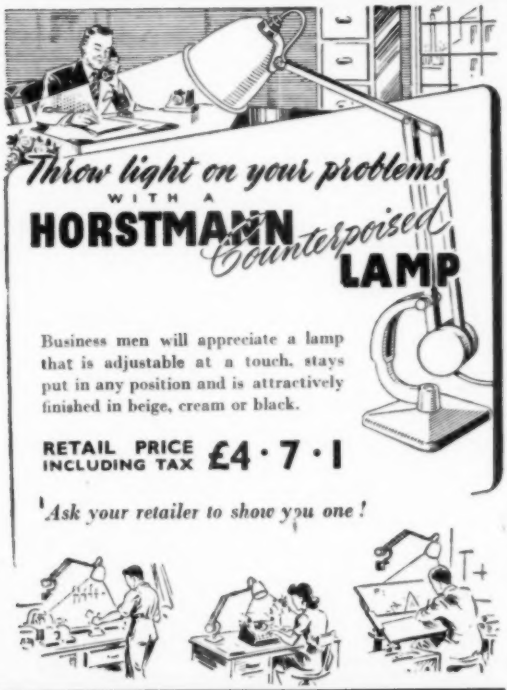

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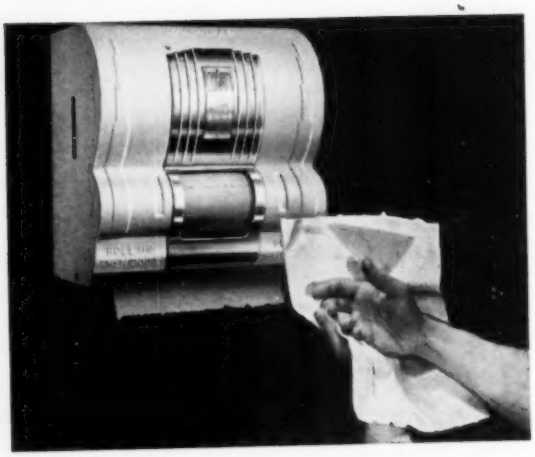

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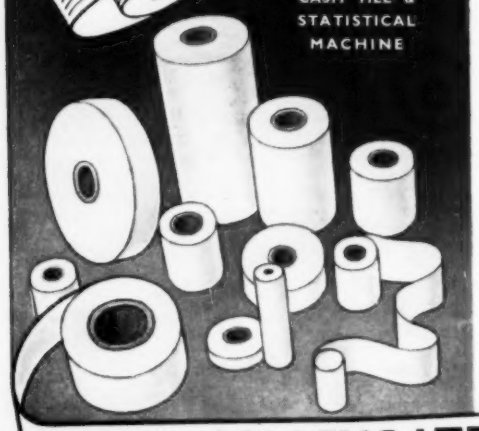

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Hospital Car Lift For Industrial Out-patients

By JULIAN ACOMB

Factory employees attending the out-patients department at Park Hospital, Manchester, are picked up by car at their place of work and returned immediately after treatment. Thus what might have been a "lost day" becomes an absence of only an hour or even less. The scheme's success suggests it might well be adopted on a wider scale.

ABSENTEEISM due to sickness which incapacitates the worker is inevitable in any business. Much absenteeism, however, is due to sickness which does not prevent the worker from doing his job, but involves him in periodic visits to hospital In most cases the consultation or treatment takes only an hour or so, but may involve a whole day away from work. The aggregate loss in production caused by such absences is considerable and could well be reduced by managements prepared to tackle the problem.

In a survey by the Park Hospital, Davyhulme, Manchester, 299 companies were asked what their policy was covering the attendance of their workers at hospital out-patients' departments during working hours. Some 134, employing 70,269 workers, replied, and it appeared that there was no organized effort to encourage employees to return to their employment the same day immediately after the conclusion of out-patients' visits; and after that there was no consistent provision for the remuneration of such employees for the period of absence from work over these periods.

It is somewhat startling to learn as a by-product of the survey that of the 134 firms answering the questionnaire only 14 had the services of a medical officer and only 26 that of an industrial nurse.

After considering the results shown by the survey, the West Manchester Hospital Management Committee, under the chairmanship of Alderman Harry Lord, J.P., worked out a scheme under which the hospital would be responsible for collecting workers from factories by car to keep out-patients' appointments and returning them, again by car, immediately the visit was concluded. A conference was then called between representatives of local firms, the local health authority and the Hospital Management Committee, at which the administrative details of the plan were discussed.

The Saving

In the first six months of the car lift scheme 987 industrial patients were treated from 48 undertakings, and each patient lost on an average only 1½ hours' working time.

Assuming that each of these patients would otherwise have lost the whole of an 8-hour working day, there was a saving to local industry of 6,415 working hours, or over 800 full working days.

The extra cost to the hospital was small. No extra staff or vehicles were needed.

The scheme is simple. A patient, on receiving a letter from his doctor, makes an appointment to see the specialist concerned with the hospital and then informs his employer of the date and time of the appointment. The appointment system is based on the normal block system. Out-patients are booked to attend at quarter-hour intervals and the total number of patients booked is allocated to the capacity of the medical officer's ability to deal with the cases.

The hospital authorities send a car to the factory to collect the worker to enable him to keep the appointment, and return him by car as soon as he is free. The cars are those normally used by the ambulance service for sitting cases.

Subsequent visits are arranged by the Hospital Appointments Bureau, which informs the firm of the dates and times. In every case a car conveys the worker to and from the factory.

The initial results have been profitable. During the first six months 987 industrial cases were treated from 48 industrial undertakings and each patient lost, on an average, only 1½ hours' of working time. If it is assumed that the patient would otherwise have lost the whole of an eight-hour working day, this represents a saving of 6,415 working hours to industry, or over 800 full working days.

The extra cost of the scheme to the hospital has been small. Though

the plan has given the ambulance service of the local authority extra work, it has not required additional staff or vehicles. In addition, there is some evidence that workers are now making greater use of out-patient facilities, since, in certain cases, they no longer have to lose a day's pay in order to attend.

The Park Hospital was fortunate in the circumstances under which it introduced the scheme. Up to 1945 it was a military hospital and was thus enabled, on returning to a civilian basis, to build up an effective appointments scheme from scratch. It is, moreover, situated in one of the most highly industrialised areas of Great Britain, around Trafford Park, and covers an area with 250,000 resident population. There is, however, good reason to suspect that a similar scheme would prove effective in other areas, if industrialists would bring pressure to bear upon their local health authority to provide it.

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Handy

THE makers of *Swarfega*—a new hand cleaner—claim that their product will remove all greasy and ingrained dirt, printer's ink, tar, rubber compound, cobbler's wax and many dyes, quickly and effectively, without harm to the skin and without scrubbing.

This antiseptic preparation features a cleansing base which dissolves compounds by simply rubbing over the skin and then rinsing off. Where no water for rinsing is available, the cleanser can be wiped off with a dry cloth. The dissolving action of *Swarfega* obviates the use of harsh abrasives, alkalis, petrols or industrial solvents.

Swarfega is recommended for use by manual workers in all classes of industry, but particularly those working in greasy conditions or with paint. Dispensers for rapid delivery of economically measured quantities are available both in 7 lb. or 2½ lb. capacities. The cleanser can be obtained in bulk quantities up to 40 gallons.

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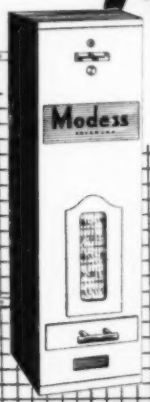

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Mechanization Speeds Service from the Kitchen

By A. G. THOMSON

The kitchen in I.C.I's new canteen at Slough has been designed to minimize labour and handling. All equipment is of the latest type, and includes electric mincing and slicing machines, a mechanical mixer in the bakery and a high-speed washing machine.

A CANTEEN is virtually a small factory. Like the works it serves, its business is to convert incoming materials into finished products of consistent quality, in accordance with the requirements of a planned delivery programme. As in any other factory, management has the three-fold task of keeping down production costs, satisfying customers, and providing optimum working conditions. This calls for highly efficient organization and close attention to every detail of equipment and layout.

I.C.I. have approximately 100 canteens. A central department in London co-ordinates the catering activities of the entire company and acts as adviser when canteens are established. In planning a new canteen I.C.I. are thus able to benefit from their vast experience in this field and each venture incorporates further improvements in organization and design.

Of particular interest, therefore, is the recent opening of a new canteen to serve the I.C.I. Paints Division factory at Wexham Road, Slough. This magnificently equipped establishment provides midday meals for about 650 people daily, besides serving breakfast in the morning, high teas in the evening, and snacks throughout the day. It replaces former works and staff canteens which had become too small.

The staff of 30, with one exception, consists of women: manageress, assistant manageress, stores clerk and cashier, kitchen supervisor, five cooks with their assistants, six general kitchen assistants, three service hands at the counter, and a general cleaner and porter. The manageress is responsible for arranging all staff duties.

Incoming supplies are placed in the bulk store, which is controlled by the cashier and stores clerk, who checks in all consignments and is responsible for entering up invoices and recording all stocks on bin cards. Food stocks are checked by the accounts department once a quarter. The manageress attends to all Food Office returns herself. The day's requirements are issued from the bulk store to a daily working store in accordance with requisitions made out by the kitchen supervisor and checked by the manageress. As far as possible menus are drawn up a week in advance.

The kitchen is spacious, measuring 100ft. by 43ft. 6in. Equipment and layout have been designed to facilitate cleanliness, and to minimize labour and handling. There are numerous working benches.

All cooking equipment is operated by steam or gas and is of the latest type, as are the electric mincing and slicing machines and other accessory equipment. Separate cold stores are provided for milk, meat and fish; the latter is equipped with slate shelves and all benches on which fish is prepared are slate topped. A feature of the bakery is a mechanical mixer with interchangeable mixing arms, which can handle any material from whipped cream to the stiffest dough. The mixing vessel is detachable and is mounted on wheels. The flour bins—also on wheels—are zinc lined.

Prepared food is placed in a series of steam-heated ovens with sliding doors opening directly on to

Gas-fitted baking oven and (left) proving oven.

the servery, which is equipped with additional warming ovens below the counter. This servery extends the length of the dining room and seven serving points are provided, enabling exceptionally quick service. The equipment includes a refrigerator for ice cream and a very fine tea and coffee making set, hot water for tea being obtainable from a moving arm.

Hygienic Washing

Empties are returned to the kitchen on three-tiered trolleys of special design, a broad aisle being left for this purpose along the centre of the dining-room. The pot washer is equipped with galvanized sinks and live steam is laid on for topping up the water. The crockery is loaded on to trays and passed through a washing machine capable of handling 120 plates in two minutes. The dishes travel through the machine on an electrically operated conveyor, being first sprayed with a detergent solution and then with boiling water. On emerging they are absolutely clean, and dry very quickly

In the dining room no distinction is made between staff and workers. Each table accommodates only four persons and any vacant table is freely available as in a restaurant. This system stimulates social contacts. All table tops are of a cigarette-proof plastic called "Formica" with a linette finish.

General view of the kitchen, showing (l. to r.) steaming ovens, gas cooking range and steam-heated boiling pans at I.C.I. Paints' Slough canteen.

The chairs are constructed of a very light alloy and are stackable. The dining-room is used for film shows, dances and other social functions and would be large enough to accommodate 800 people, if required.

The decorative schemes of both kitchen and dining room are a special feature. The kitchen has buff floor tiles and cream wall tiles, the upper walls being glacier green. The scheme for the dining-room is based on rose beige walls set off by French green and ivory. The colour schemes were planned by I.C.I. Paints Division's own Colour Advisory Service.

Heating is by a hot water radiation system, while air can also be drawn from the outside by four unit heaters. The dining-room is ventilated through apertures leading into the kitchen, where the fumes are mechanically exhausted through ducts into the atmosphere. All cooking equipment in the kitchen is provided with canopies and the fumes are led into the main duct system.

To stimulate social contacts, staff and workers share the same tables.

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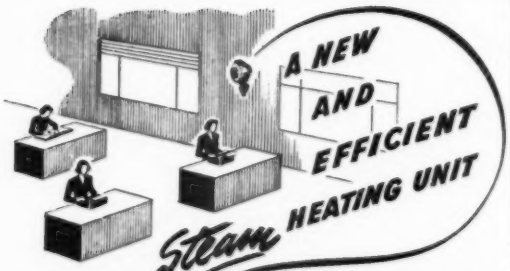

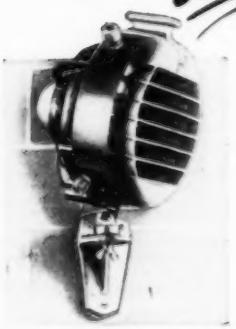

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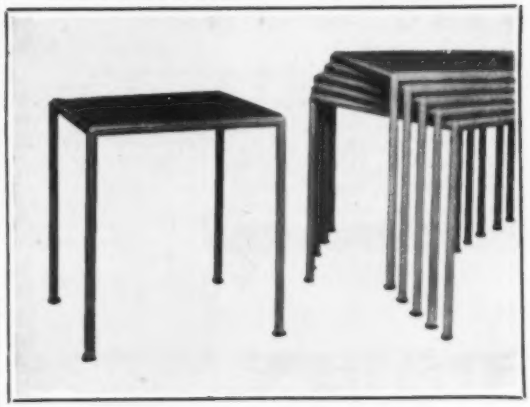

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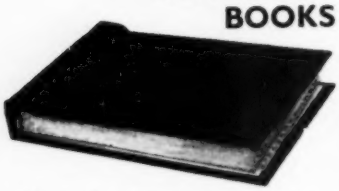

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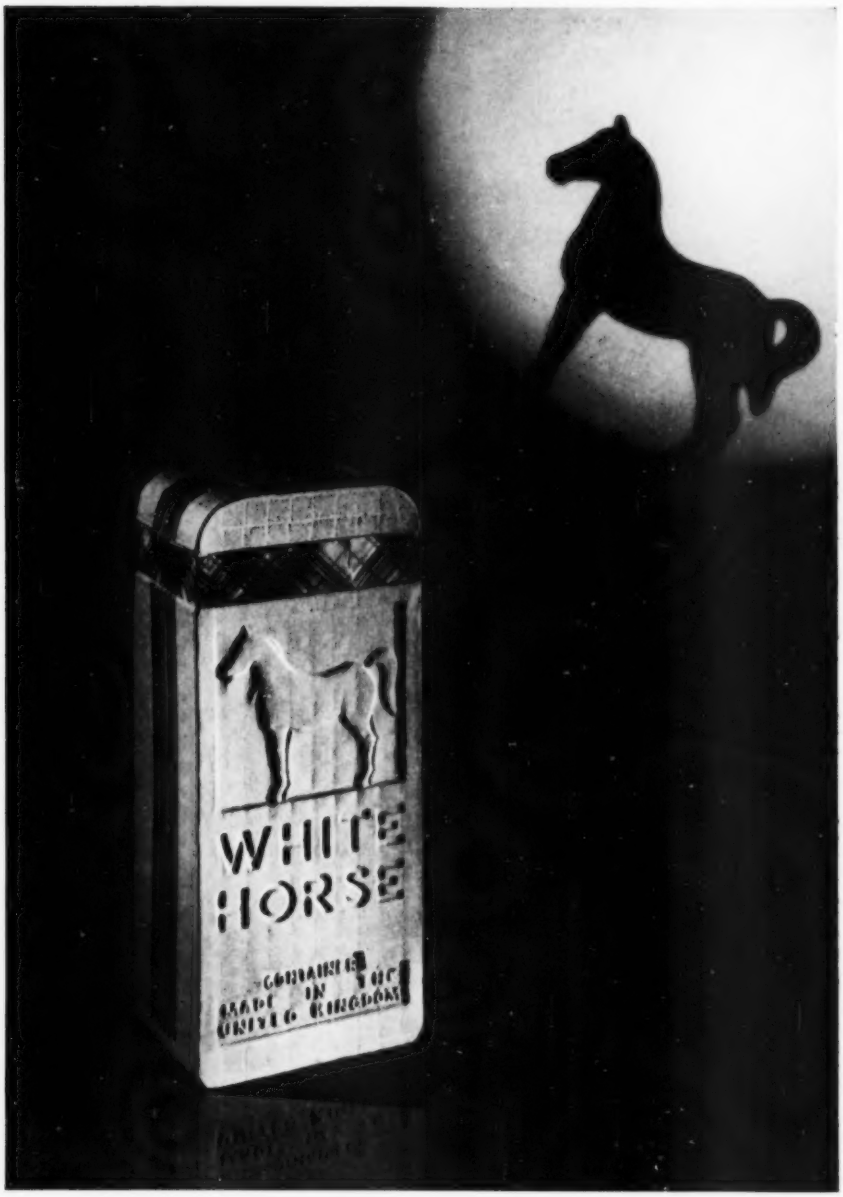

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